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ORIGINAL LECTURES.

PASTEUR'S METHOD FOR THE PREVENTION OF HYDROPHOBIA.

Extract from a lecture delivered before the Alumni Association of Long Island College Hospital, Brooklyn, on April 21, 1886.

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DURING the past two or three months, the newspapers and medical journals in this country and in Europe have made frequent reference to the protective inoculations against hydrophobia which are being made in Paris under the direction of the distinguished French chemist, Pasteur.

Various opinions have been expressed as to the value of these inoculations as a protection against the painful and fatal disease in question. By some this has been accepted without question in advance of the experimental evidence, which requires the lapse of a certain time to give it value; and it was even proposed to establish institutions in this country for practising Pasteur's method at a time when Pasteur himself did not feel justified in announcing its success as applied to man.

On the other hand, certain conservative medical critics seem unwilling to accord any value to the experimental evidence as it stands to-day; and some have even gone so far as to assume that Pasteur has from the first been laboring under a serious error in assuming that the fatal disease which he induces in rabbits, by inoculations with material obtained rom rabid dogs, is a form of hydrophobia. Pasteur himself has also been the subject of adverse criticism. He has been charged with keeping his method a secret. The man whom we have so long honored for his scientific achievements, and who for several years past has devoted his entire energies to a painstaking experimental research with reference to the cause and prevention of this terrible malady, has been spoken of by some of his American critics in a way which seems to indicate that they consider him an ignoramus and a charlatan.

Such an estimate of the man can only arise from an imperfect acquaintance with his past achievements, and with the scientific method and humanitarian spirit in which his present undertaking has been conducted.

The charge of secrecy is entirely without foundation. Pasteur has very properly refrained from publishing any details with reference to his method while it was still under trial, and he has not been willing to encourage others to commence the practice of protective inoculations before the value and safety of the method had been fully established by his own experiments. But he has always been ready to explain to those competent to appreciate the situation, the exact status of his experimental research, and to demonstrate to proper persons his method of operation.

The writer had evidence of this during a visit to Pasteur's laboratory in May last. At this time no inoculations had been made in the human subject, but Pasteur had fully satisfied himself by repeated experiments that dogs could be rendered immune even after they had been bitten by a rabid animal. He was kind enough to spend a morning in showing me through his laboratory, and in explaining to me his method and the results attained up to that date; and, also, to give me a practical demonstration of his mode of operating upon the rabbit.

The facts as developed by his experimental researches are as follows:

The brain and spinal cord of rabid dogs contain the virus of hydrophobia, and the disease may be transmitted by inoculations with this material.

A most certain way of transmitting the disease is by introducing a small bit of cord, with proper antiseptic precautions, upon the surface of the brain of a susceptible animal. This is most conveniently done by trephining the skull and injecting a little of the virulent material, rubbed up with distilled water or sterilized *bouillon*, beneath the dura mater. In the rabbit such an inoculation induces rabies after an incubation period of fifteen days.

The morbid phenomena which occur in rabbits as a result of such inoculations are not identical with those presented by rabid dogs. But the essential identity of the disease is shown by the fact that the spinal cords of these rabbits have the same pathogenic virulence as is exhibited by similar material obtained from a dog which has succumbed to hydrophobia. This virulence increases by transmitting the disease through a series of rabbits. After transmission through twenty to twenty-five rabbits the period of incubation is reduced to eight days, and by continuing until the series reaches fifty the period is reduced to seven days, but after this no further increase in virulence occurs.

On the other hand, the transmission of the disease through a series of monkeys is attended with a diminution of virulence as shown by a longer period of incubation.

As rabbits are easily obtained, it is evident it is a simple matter to keep on hand a stock of the most potent virus by inoculating one of these animals at frequent intervals with spinal cord from a rabbit in which the period of incubation had been reduced to seven days. But this material is too potent to be used at first in protective inoculations. Fortunately, however, Pasteur has discovered a simple method of attenuating the virulence of such material to any desired degree. He finds that if one of these spinal cords is suspended in dry air the virulence gradually diminishes and finally disappears entirely. The time required for such extinction of virulence depends largely upon the temperature to which the cord is exposed, and also upon its thickness.

By experiment Pasteur has ascertained that at a temperature of 20° C. a piece of cord of moderate thickness loses its virulence in about fifteen days. It is, therefore, possible to have at hand the virus of rabies of various grades of potency. In his protective inoculations Pasteur commences with the least virulent material, and on successive days repeats the operation with more and more potent virus, until at last he uses that of full strength as obtained from a rabbit in which the period of incubation was reduced to seven days.

At the time I visited Pasteur's laboratory the demonstration had been made as to the efficacy of such inoculations so far as dogs are concerned, and I had pointed out to me a number of these immune animals which had proved refractory to inoculations with the most potent virus, or to the bite of a rabid animal.

Before venturing to operate on man, Pasteur had tested his method upon fifty dogs of various ages and varieties, and had in every case rendered them immune.

Finally, on the 6th of last July, the opportunity presented itself to test his method upon man, and with the assistance of MM. Vulpian and Grancher, the boy Joseph Meister was subjected to treatment. This boy had been terribly bitten by a dog supposed to be rabid. This has since been disputed, and, indeed, some of Pasteur's critics are unwilling to admit that the whole series of 350 cases which have since been subjected to the same treatment, can be accepted as furnishing evidence of the value of his method. For, it is said, it is not proved that these individuals were all bitten by rabid animals, and we know by experience that not all of those who are bitten by dogs, undoubtedly rabid, are liable to contract hydrophobia. This is all very true, and Pasteur is as well aware of it as the most learned doctor in the land. But how is he to test his method except by inoculating those who have been bitten by dogs believed to be rabid; and if 350 cases treated with but a single unsuccessful result, cannot be taken as evidence of the value of his method how is such evidence to be obtained?

With reference to the general character of these cases, and the exceptional case in which death occurred after inoculation, I shall let Pasteur speak for himself. I quote from his last communication to the French Academy of Sciences, published in the *Comptes Rendus*, of March 1, 1886.

"On the 26th of last October I communicated to the Academy a method of preventing rabies after the bite of a rabid animal, and gave the details of its application to a young Alsacian, *Joseph Meister*, who had been gravely bitten on the 4th of July, 1885. The dog was manifestly rabid, and a recent inquiry, made by the German authorities, has demonstrated anew that the dog was rabid—*en plein accès de rage*—at the moment when it bit Meister. The health of this child remains perfect. Eight months have elapsed since the bite was inflicted.

"At the time my note was read (Oct. 26th) I had under treatment, a young shepherd, *Jupille*, who had been bitten, even more severely than Meister, on the 14th of October. The health of *Jupille* also remains excellent. It is now four months and a half since he was bitten.

"As soon as the favorable results in these first two attempts became known, a great number of individuals who had been bitten by rabid dogs applied for treatment. This morning we have commenced the preventive inoculation of the 350th patient.

"I confess that I have participated in the general surprise at the large number of persons bitten by rabid dogs, although my laboratory, which has been devoted to the study of this disease for more than five years, has been a centre for information relating to all that concerns this malady. This ignorance resulted from more than one cause.

"As long as rabies was considered incurable, the effort was made to remove from the mind of the patient, even the name of the malady. When a person was bitten, every one declared that it had been by a dog which was not rabid, although the report of the veterinary surgeon or of the physician might affirm the contrary, and the greatest silence was recommended with reference to the accident. . . . .

"In order to convince prejudiced persons or those who might even be hostile, I have taken the precaution to draw up very rigid statistics. I have exacted certificates verifying the fact that the dog was rabid, which have been delivered by authorized veterinary surgeons or by physicians. Nevertheless, in some rare cases, I have felt obliged to treat persons bitten by dogs supposed to be rabid, but which had escaped, because these persons, aside from the possible danger of their bites, lived in a state of fear capable of injuring their health if we had refused our intervention.

"I have not been willing to treat persons whose clothing had not been visibly perforated or torn by the fangs of the animal. It is evident that in this case there is no danger to be feared, because the virus has not been able to penetrate into the flesh, even when a contused wound has been inflicted, although this may have been deep and bleeding. In a certain number of suspected cases the fact that the dog was rabid has been verified in my laboratory, by the inoculation of rabbits, or of guinea-pigs, with nervous material taken from the body of the animal.

"I wish to give here a sufficiently exact idea of the nature of the bites, by quoting, in their chronological order, a series of persons submitted to treatment. As it would be fastidious to enumerate the details relative to three hundred and fifty persons, I will choose more particularly among the one hundred first bitten and treated. These occupy the interval of time between November 1st and December 15th. They have especial interest. They are at the present moment beyond the period truly dangerous.

"If I open my register at the chapter of this first one hundred, I find, in an interval of ten days, the following variety of cases. They will give to the Academy an idea of what passes at my laboratory each morning.

"*Etienne Roumier*, forty-eight years, from the Commune of Ouronëre, bitten in both hands, November 4, 1885, by a dog recognized as rabid by M. Moreau, veterinary surgeon. No cauterization or treatment of wound for twenty-four hours.

"*Chapot*, aged forty-three years, and his daughter, aged fourteen years, living in Lyons, both bitten in left hand, November 6, 1885; the daughter more severely bitten than her father. The wounds were bathed in a

solution of ammonia by a druggist. The dog was recognized as rabid by the veterinary school of Lyons.

"*François St. Martin*, aged ten years, of Tarbes, bitten in right thumb, Wednesday, November 7. Wound washed with ammonia by a druggist. Dog recognized as rabid by M. Dupont, chief of the sanitary service of epizootics.

"*Marguerite Luzier*, aged thirteen years, of Fongrave, bitten in the leg by a rabid cat, November 11, 1885. Wound cauterized with carbolic acid. The extent of the bites made it necessary to place this child in the hospital for children.

Corbillon, aged twenty-seven years, from La Neuville, near Clermont, bitten November 12. Dog recognized as rabid by M. Chantareau, veterinary surgeon at Clermont. Cauterized with a hot iron eight hours after the accident.

"*Bouchet*, aged eight and a half years, lives at the seventh lock of the canal of St. Denis, bitten November 12, in the left hand and in the right thigh; clothing of thigh torn. Dog recognized as rabid by M. Coret, veterinary surgeon at Aubervilliers. Cauterized with a hot iron three-quarters of an hour after the accident by Dr. Dumontel.

Madame Delcroix, of Lille, bitten November 6, in right foot. Cauterized with a hot iron nine hours after the accident. Dog recognized as rabid by M. Frélier, veterinary surgeon at Lille.

"*Plantin*, lives at Etrung, bitten early in November, in the right hand. Cauterized forty-eight hours after the accident. Dog recognized as rabid by M. Eloire, veterinary surgeon at La Capelle.

"*Jeanne Pazat*, aged seven years, of Mareuil, bitten November 12, by a dog, recognized as mad by Dr. de Pindray. Presented himself forty-eight hours after the accident to Dr. de Pindray, who judged, with reason, that it was useless to practise cauterization.

"*Madame Achard*, of Saint Etienne, bitten November 9, in right foot, and November 12, by same dog, in right hand. Dog recognized as rabid by M. Charloy, veterinary surgeon at Saint Etienne. No cauterization.

"*Madame Alphonsine Legrand*, of the commune of Baune, in the department of the Aisne, bitten in the chin November 6, 1885. Dog recognized as rabid by M. Decarme, veterinary surgeon at Château-Theirry. No cauterization.

"*Antoine Cattier*, aged forty-three, lives at No. 12 Rue Hospitalière Saint-Gervais, Paris, bitten in the hand November 16. Cauterized with a hot iron twenty hours after the accident. Dog recognized as mad by its master; characteristic voice of rabies, refused food, bit and swallowed bits of wood and other objects.

"On November 15 were bitten at St. Ouen, near Paris, *Ternat, his wife, Madame Delsors*, and *Madame Dalibard*. All four were bitten by a dog recognized as rabid while living, and after its death by the veterinary surgeon Sanfourche, of Saint-Ouen. Cauterization insignificant or tardy.

"*Dr. John Hughes*, of Oswestry, England, bitten November 13, 1885. Two severe wounds in lower lip. No cauterization. Dog recognized as rabid by the patient himself.

"*Widow Faure*, of the village of Alma, in Algeria, bitten in the leg September 1, 1885, clothing torn, by the same dog which had bitten four infants, one of whom died at the hospital of Mustapha, in Algeria, two months after being bitten. Dr. Moreau, of Algiers, has given a very careful account of the symptoms of rabies in this child. The preventive treatment was applied to the other three in the middle of November.

"*Madame Gréteau*, of Bordeaux, bitten, November 14th, in the right ring-finger by two bites, one in the pulp of the extremity, the other in the nail, which was cut near its centre. Dog recognized as rabid by Dr. Douand. Slight cauterization, and wounds washed with solution of ammonia.

"*Voizenet* of Semur, Gold Coast, fifty years; bitten, November 16th, in both legs by a dog recognized as mad by M. Colas, veterinary surgeon. Cauterized with a hot iron four hours after the accident.

"*Guichon*, of Bordeaux, sixty-seven years; bitten, November 15th, in the left hand by the dog which had bitten Madam Gréteau, referred to above.

"*Walter Halfacre*, of London, twenty-eight years; bitten in the hand, November 15. Sent by Sir James Paget. No serious cauterization. The brother of Halfacre died of hydrophobia five years ago, after a bite to which no attention was paid, as it was considered insignificant.

"*Calmeau*, of Vassy-lez-Avallon; bitten, during the night of November 15th–16th, in the belly, the thigh, and the knee. Clothing and shirt torn in strips. No cauterization whatever. Dog recognized as mad by M. Colas, veterinary surgeon of Semur. The same dog which bit Voisenet, referred to above.

"*Lorda*, aged thirty-six; lives at Lasse (Basses-Pyrénnees). This case is most interesting. Lorda was bitten October 25th, and arrived at my laboratory November 21st, the twenty-seventh day after he was bitten. The day he was bitten, seven pigs and two cows were bitten by the same dog. Now these nine animals died of hydrophobia, the pigs after a short period of incubation of from fifteen days to three weeks. After the death of these animals, Lorda became frightened and set out for Paris. The first cow died thirty-four days after being bitten; the second fifty-two days after. I owe the detail of these interesting facts to M. Inda, the skilful veterinary surgeon of Saint-Palais. One observation made in his report ought not to be omitted: it is that, immediately after being bitten, the cows were profoundly cauterized with a hot iron; this detail is underlined by M. Inda. I have had sufficiently numerous proofs of the inefficacy of cauterizations, in certain cases of those made with a hot iron and without delay. The health of Lorda remains perfect. His treatment was terminated the 28th of last November.

"Such is the enumeration, in the chronological order of their arrival at my laboratory, of twenty-five persons bitten, comprised in a period of ten days. Other periods of ten days offer an enumeration the recital of which would not teach anything more than in that given, although in each period one may encounter one or several cases not less interesting than that of Lorda. In order to abridge, I will only refer to a single one of these cases, and I choose it in preference to others, because it has caused me very lively apprehensions.

"The case is that of a boy of eight years, named *Jullion*, residing at Charonne, No. 6 Rue de Vignolles; bitten November 30th. This child, seeing the dog coming toward him, commenced crying. At this

moment, the lower jaw of the animal entered the open mouth of the child. A fang cut the upper lip and penetrated deeply into the posterior portion of the palate, while one of the fangs of the upper jaw of the animal remained outside of the mouth of the child, penetrating between the right eye and the nose. No cauterization was possible. The dog which bit Jullion was recognized as rabid by M. Guillemard, veterinary surgeon, No. 37 Rue de Citeaux, Paris.

"I could extract from the series of persons treated many other cases of bites in the face and head without any cauterization whatever.

"In a single instance the treatment has been inefficacious; the patient succumbed to hydrophobia after having been subjected to treatment. The case was that of *Louise Pelletier*. This child, aged ten years, was bitten October 3, 1885, at La Varenne-Saint-Hiliare, by a large dog—*Chien de Montagne*—and was brought to me on the 9th of the following November, thirty-seven days after being bitten—profound wounds in the axilla and in the head. The bite in the head was so grave and of such extent that, notwithstanding the continuous care of her physician, it became very purulent and bleeding on the 9th of November. It had an extent of 0.12 to 0.15 m. and the scalp was yet wanting in one place. This wound inspired me with grave fears. I begged Dr. Vulpian to come and verify the condition of the wound. In the scientific interests of the method I ought to have refused to treat this child which arrived at so late a date, and in exceptionally grave condition; but by a sentiment of humanity and in face of the anguish of the parents, I would have reproached myself if I had declined to operate.

"The premonitory symptoms of hydrophobia manifested themselves, November 27th, eleven days after the termination of the treatment. They became more pronounced on the morning of December 1st. Death followed, with the most pronounced symptoms of rabies, on the evening of December 3d.

"A grave question presented itself, What virus had caused the death of the child; that of the bite inflicted by the dog, or that of the protective inoculations? It was easy to determine the question. Twenty-four hours after the death of Louise Pelletier, by authority of the prefect of police and of the parents, the skull was trephined in the vicinity of the wound, and a small quantity of brain substance was aspirated. This was inoculated, by the method of trephining, into two rabbits. These rabbits were attacked with paralytic rabies eighteen days after, both at the same time. After the death of these rabbits their spinal cord was inoculated into two other rabbits, which contracted hydrophobia after an incubation period of fifteen days. These experimental results suffice to demonstrate that the virus which caused the death of the young Pelletier was the virus of the dog by which she had been bitten. If death had been due to the effects of the virus of the preventive inoculations, the duration of the period of incubation in the second rabbits inoculated would have been seven days, at most. This follows from the explanations made in my preceding note to the Academy.

"The preventive treatment has in no instance given rise to evil results in the 350 cases, not a phlegmon, not an abscess, only a slight œdema and redness as a result of the latest inoculations; but can we say that it has been really efficacious for the prevention of rabies after the bite of a rabid animal? For the greater number of persons already treated, one eight months since (Joseph Meister), the second more than four months ago (Jean Baptiste Jupille), and for the greater number of the 350, we may affirm that the new method has stood the test.

"Its efficacy can be inferred, above all, from a knowledge of the average number of cases of rabies resulting from the bite of rabid animals. The works of human medicine, and of veterinary medicine furnish, in this regard, indications which are not at all concordant. This is easily comprehended when one recalls that which I said just now with reference to the silence very often maintained by the families and the physicians as to the existence of bites by rabid dogs, and even upon the cause of death, which is sometimes stated as meningitis when it is well known that it was due to rabies.

"The following fact illustrates the difficulty of establishing reliable statistics. On the 14th of July, 1885, five persons were bitten successively by a rabid dog upon the road to Pantin. All of these persons died of hydrophobia. Dr. Dujardin-Beaumetz informed the Board of Health of the Seine, by order of the Chief of Police, of the names, the circumstances of the bites, and of the death of the five persons. When such a series enters into a statistical table, the proportion of deaths to the number bitten will be more elevated. It will, on the other hand, be diminished by a similar series of five persons bitten, without a single death. I should have greater confidence in the following statistics: M. Leblanc, a learned veterinary surgeon, member of the Academy of Medicine, who has for a long time directed the sanitary service of the préfecture of police of the Seine, has had the kindness to send me a precious document upon the subject of which I am speaking. It is an official summary made by himself from the reports of the commissioners of police, or from information furnished by the veterinary surgeons in charge of the hospitals for dogs. This document covers six years, and shows:

"That in 1878, in the Department of the Seine, out of 103 persons bitten there were 24 cases of hydrophobia.

"In 1879, out of 76 persons bitten 12 died of hydrophobia.

"In 1880, out of 68 persons bitten, 5 died from hydrophobia.

"In 1881, out of 156 persons bitten, 23 died of hydrophobia.

"In 1882, out of 67 persons bitten, 11 died of hydrophobia.

"Finally, in 1883, out of 45 persons bitten, there were 6 deaths from hydrophobia.

"The figures which precede give an average of about one death by hydrophobia for every six persons bitten.

"But in order to appreciate the efficacy of the method for the prophylaxis of hydrophobia, there remains a second question, not less important than that of the average number of cases resulting from the bites of rabid animals. It is the question as to whether sufficient time has elapsed from the date of the bites, among the persons thus far treated, to remove any apprehension that they may be attacked. In other words, after what period may rabies develop as a result of the bite of a rabid animal?

"Statistics show that it is during the two months following the bite that rabies is especially apt to occur—that is to say, within forty to sixty days. Now, among the persons of all ages and all sexes already treated by the new method, one hundred were bitten before the 15th of December—that is to say, more than two and a half months ago. The second hundred have passed from six weeks to two months since the date of being bitten. For the remaining one hundred and fifty persons treated or being treated, all remain, up to the present moment, quite as in the preceding two hundred cases.

"We see that, according to the most rigid statistics, a considerable number of persons have already been rescued from death.

"The prophylaxis of rabies, after infliction of the bite, is established.

"An establishment for protective inoculations against rabies should be founded."

The only criticism which suggests itself with reference to this very interesting statement of facts, is that Pasteur does not attach as much importance to the prophylactic value of early and thorough cauterization, as this measure seems entitled to. The considerable number of cases in which cauterization was practised, may have had a greater influence upon the favorable result in the extended series of cases reported, than Pasteur is willing to admit; at all events, it will be well to withhold our final judgment as to the value of the method, until the 350 cases reported are all beyond the limit of time within which the disease may develop, and especially until we have from Pasteur a satisfactory explanation of the failure in the cases of three of the wolf-bitten Russians, who have recently been under his treatment, and who are reported by telegraph to have died of hydrophobia.

ORIGINAL ARTICLES.

NOTES ON THE LOCALIZATION OF FOREIGN BODIES WHICH HAVE ENTERED THE VITREOUS CHAMBER, AND THE SUBSEQUENT TREATMENT.

CASE OF A PIECE OF STEEL APPEARING IN ORIGINAL WOUND AFTER REMAINING QUIESCENT IN THE EYE FOR NEARLY THREE MONTHS.[1]

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No department of ophthalmic surgery has received more careful study of late years than that pertaining to the localization and removal of substances within the eyeball. In many cases great pain enforces prompt action. In all cases the utmost care must be exercised to preserve what sight may remain in the injured eye, and to insure against sympathetic ophthalmia.

Juler[2] states that when foreign bodies enter the eyeball, they "occasionally lodge in the vitreous, although more often they are either arrested in the lens, or pass right through the vitreous chamber." If they pass through the vitreous chamber, they usually lodge in the retina or choroid. When they stop in the vitreous, or, after striking against the fundus, bound back into the vitreous chamber, "they are," says Professor Knapp,[1] "located by preference in the lower part."

What changes their presence within the eye may cause depends largely on their situation. Of all the internal ocular structures, the retina and choroid seem to be most tolerant of a foreign body. The particle may become encysted in one or both of these coats, and remain for many years, or during life, and cause no more trouble than the production of a scotoma. This result is, unfortunately, rare. In by far the majority of cases it sets up a painful acute irido-choroiditis, or an insidious and equally dangerous chronic cyclitis, greatly endangering the sound eye. Hence the localization and removal of the particle become matters of great importance.

We have now many aids in diagnosticating the situation of a substance capable of doing so great mischief. Foremost among these is the ophthalmoscope. Its use is, however, limited to those cases in which the cornea and lens are not rendered opaque by the passage of the foreign body. The ophthalmoscope will frequently show the offending particle embedded in some part of the fundus, or else loose in the vitreous. Special care should be exercised in the examination of the track of the wound and the lower part of the vitreous chamber. In many cases, however, the body has passed into the eye through the cornea and lens, and, when the patient is seen, these structures are so cloudy that a thorough ophthalmoscopic examination is impossible.

To what extent the surgeon should now go in his efforts to make a complete diagnosis must depend on several circumstances. If the case is a recent one, and there is pain, he must, of course, try to find and extract the foreign body. This should *always* be done when the patient cannot be carefully watched. If, however, the case is several days or weeks old, if there is no pain, and if the patient is easily accessible, we are, I think, justified in supposing that the substance has become encysted, and in waiting developments. If this course be pursued, the danger of delay after the first reappearance of pain must be impressed upon the patient.

When the vitreous chamber is to be explored, the silver probe and magnet are the best reputed diagnostic agents. Dr. C. S. Bull[2] speaks of the former as being "almost justifiable when the presence of a foreign body is suspected, though the particle itself is not seen." When used, it is to be carefully introduced into the wound, along its track, and, if possible, without injuring other structures, to the bottom of the vitreous chamber.

The magnet has now generally superseded the probe. Most of the foreign bodies which enter the vitreous chamber are of either iron or steel, and hence the magnet presents these marked advantages over the probe: (1) It will often attract to itself a foreign substance without coming into actual contact with it, and so reveal the particle when the probe might miss it. (2) It serves as an *extractor*. Dr.

[1] Read before the Clinical Society of Maryland, Jan. 22, 1886.
[2] Juler: Text-book of Ophthalmic Science and Practice.

[1] Knapp: Archives of Ophthalmology, xiv., Nos. 2 and 3.
[2] Bull: Ibid., ix., No. 1.

MacKeown,[1] of Belfast, seems to have been the first to use the magnet, not only as an extractor, and "as a probe," but also as "a means of diagnosis when held outside the eye by the movements impressed on a suspected foreign body."[2] In one case "a quivering movement of the body was caused" by a "magnet held close to the eye." The body was subsequently extracted. In another,[3] a doubtful body was in the iris, and a magnet held close to the cornea caused "the pupil to change its shape." A pointed magnet then "drew the segment of iris containing the foreign body through the wound." Mr. MacHardy, of London,[4] applied a powerful electro-magnet in front of an eye" with a recent corneal wound and a severe iritis. Immediately great pain was caused. After anæsthesia, the continued application of the magnet to the front of the eye caused the body "at once to pass out of the eye, and fasten itself upon the pole of the magnet." Dr. Minor[5] reports a very similar case, and others are found in current literature.

The magnets commonly used are the *electro*-magnet—either that devised by Prof. Hirschberg,[6] or some modification of it—and the *permanent* magnet, one of the best being that of Dr. Grüning,[7] of New York. Of these, the *electro*-magnet is the stronger and more reliable. Prof. Knapp[8] thus states the present position of the magnet as a diagnostic agent:

"It seems legitimate, even when the foreign body can neither be seen, nor by an exudation or a limitation in the field of vision be localized with some degree of probability, to open the capsule in the outer lower quadrant, introduce the point of a magnet, which should not be too long or too thin, directly to the bottom of the vitreous, then withdraw. In case the foreign body is not reached, a second or third attempt, cautiously probing a larger area of the interior of the eye, can be made with sufficient safety."

During my three years' connection with the Presbyterian Eye, Ear, and Throat Hospital, I have frequently seen Prof. Chisolm *suspect* the presence of a foreign body within the eye—although the patient was sure it was not there—on account of the *chemosis of the conjunctiva*. In many instances subsequent enucleation confirmed his suspicion. Chemosis, as an accompaniment of foreign bodies within the eye, has been noted by several observers, Prof. Knapp,[9] Prof. Hirschberg,[10] and others. In these cases, as well as in those I have observed in the practice of Prof. Chisolm, there were considerable pain, increased by pressure, and marked signs of intraocular inflammation. "Œdema of the conjunctiva is met with very frequently in the course of inflammations of the inner tunics of the eye," says Soelberg Wells.[11] It may be that the chemosis mentioned was simply the result of intraocular inflammation brought about by the foreign body within the eye. At any rate, I think that conjunctival chemosis is present in a sufficient number of cases to justify its being classed as a symptom "leading us to *suspect* the presence of a foreign body within the eye"—provided, of course, the history is one of injury to the eye. Dr. C. S. Bull,[1] Editor of the American edition of Soelberg Wells's text-book, gives the following under this head: (1) The persistence of pericorneal injection and of a marked tenderness on pressure, even when phthisis bulbi has begun; (2) The *increase* of tension with the presence of cyclitis, instead of a *diminution* of tension, as we should naturally expect.

In regard to the *treatment*, if the case is of long standing, if the foreign body can be seen encysted in the fundus, and is causing no other trouble than the production of a scotoma in the visual field, it is best to leave it alone—always, however, warning the patient of the possibility of the substance becoming loosened, and then causing trouble. The same may hold good if the eye has been destroyed. Still, as there is in this case no sight to preserve, it is unquestionably safer to attempt the removal of the body, and, failing in this, to enucleate the globe. Prof. Knapp[2] relates a case, first reported by Dr. G. Strawbridge, in which a destroyed eyeball was kept for ten years. During this time it underwent three attacks of irido-choroiditis, which subsided without involving the other eye. Sympathetic irritation occurred after the fourth attack. when the globe was enucleated. The splinter was found in the sclerotic. He also mentions[3] a case of his own in which he was obliged to enucleate seventeen years after the injury had been received.

In *recent* cases Prof. Knapp[4] advises the attempt to remove "the foreign body by curved hooks, forceps, or the magnet only, if it can be seen; otherwise he would let the patient quietly lie in bed on his back, use atropia, and bandage both eyes with absorbent cotton and a flannel roller, thus securing the best conditions for the foreign body to sink on the retina, in case it be floating in the vitreous, as well as to fasten itself on or in the retina, if once it have reached that membrane." In a more recent article,[5] however (from which I have already extensively quoted), he thus concludes his very clear directions regarding the use of the magnet as a diagnostic agent:

"When the foreign body is not then brought out" (*i.e.*, after three or four attempts to find it with the magnet) "it is more advisable to enucleate the eye than to make further attempts, because rude dealing with the interior of the eye, even if the foreign body is at last removed, frequently enough causes cyclitis, which is dangerous for both eyes."

When the particle is seen, and an attempt to remove it is decided upon, it is generally best to open the eyeball at the site of the foreign body. Prof. Knapp[6] suggests a scleral flap as being preferable to a linear incision straight down upon the body. In a

1 Quoted by Hirschberg, Arch. of Ophth., x., No. 4.
2 Loc. cit. 3 Loc. cit.
4 Quoted by Hirschberg, Arch. of Ophth., x., No. 4.
5 Minor: Arch. of Ophth., xii., No. 1.
6 Described in article, Arch. of Ophth., x., No. 4.
7 Described in Soelberg Wells's Text-book, 4th American edition.
8 Arch. Ophth., xiv., 2 and 3.
9 Knapp: Arch. Ophth., ix., No. 2, Case 2. Also case quoted by Hirschberg, Arch. Ophth., x., No. 4.
10 Loc. cit. 11 Text-book, 4th American edition.

1 Wells's Text-book.
2 Knapp: Archives of Ophthalmology, xi., No. 2.
3 Ibid., xiv., Nos. 2 and 3.
4 Ibid., xi., No, 2.
5 Knapp: Archives of Ophthalmology, xiv., Nos. 2 and 3.
6 Ibid., Arch. Opth., ix., 2, Case 1.

case narrated[1] he "united the scleral wound with two delicate silk sutures." He lost no vitreous during the operation, and the wound healed kindly.

Dr. J. L. Minor[2] suggests that when the magnet is to be used, the opening in the sclera be a "triangular flap." He thinks that this step "reduces to a minimum the danger of having the particle of iron scraped off when the magnet is withdrawn." The conjunctiva over the flap is to be sutured after operation.

Finally, it is always necessary, in giving a prognosis, to bear in mind Prof. Hirschberg's[3] remark, that "Enucleation is only sometimes *postponed* but *not prevented*," when the attempt at removal is successful. In the preparation of this paper I have found forty-nine carefully reported cases of successful attempts to remove foreign bodies which had pierced the vitreous chamber. In eight of these, two optico-ciliary neurotomies and six enucleations were done on account of the reappearance of inflammatory symptoms in periods ranging from three weeks to three months after the removal of the foreign body.

The following case presents many points of interest in the diagnosis and treatment of foreign bodies within the eye: F. B., male, thirty years of age, employee of the Baltimore and Ohio Railroad, applied for treatment at the Presbyterian Eye, Ear, and Throat Hospital, on October 18, 1884. He gave the following history: On the 14th instant, while working in the foundry-shop at Mount Clare Station, he was struck in the right eye by a piece of steel casting, chipped off by the hammer of the man next to him. He claimed that he was able to see with the eye directly after the accident, and on his arrival home one hour later. During that afternoon he consulted Dr. Russell Murdoch, of this city. Dr. Murdoch has kindly informed me of the man's condition at the time he saw him, and of what he did for him. He found the patient suffering some pain, with a jagged, irregular wound in his cornea, and the iris cut. The man could not see when Dr. Murdoch saw him, as the *lens was opaque*. After the patient had been etherized, Dr. Murdoch introduced the small bar of Grüning's permanent magnet into the wound, passing it behind the iris and into the vitreous chamber. Failing to find the foreign body after three or four attempts, he allowed the patient to recover consciousness, and then advised enucleation. This was refused.

The individual now for four days made use of the popular "sugar of lead" eye-wash, and at the end of that time was brought by a friend to the Presbyterian Eye, Ear, and Throat Hospital. His eye was then free from pain, and presented the following appearance: There was some conjunctival congestion, but no chemosis. The cornea showed an irregular cut, commencing at the pupillary centre, and extending along the horizontal meridian almost to the inner scleral junction, then running upward and inward, and extending about a line into the sclerotic. The iris was cut from the pupil upward and inward to the periphery. Along the vertical portion of the corneal wound it was adherent to the corneal edges. The pupil was small, indistinct in its outline, and filled with the cataractous lens. There was good light perception. I gave the patient a four grain solution of atropia to be used every four hours, and put on a cold compress. I saw him the next day at my office, and carefully examined the wound for a foreign body, but found none. There was no dilatation of the pupil from the atropia. The man had had a comfortable night, and was free from pain. I told him he would probably have to allow the eye to be removed, but concluded, as he was perfectly easy, and could be seen when necessary, to await developments. After Dr. Murdoch's careful search for the foreign body, I considered any further work in that line unnecessary. He was ordered to continue the atropia, and to refrain from work of any kind. For the next ten weeks, till December 20th, I saw him two or three times a week. His condition was practically unchanged.

About December 23d he commenced to complain of pain. The eye became somewhat congested, and on December 26th was quite red and painful. On this day I discovered, on examining the wound by oblique illumination, a pin-point, brownish spot in the scleral wound. This had not been there before. I immediately cocainized the eye, and on passing a fine probe between the edges of the wound, I felt something hard. With a pair of iris scissors I enlarged, or rather reopened, the vertical portion of the corneal wound. As I did so, a brownish mass, partly covered by iris, filled the incision. With a pair of iris forceps I raised this out of the eye, and in doing so a small splinter tore the iris. This torn iris I cut off. A few drops of blood and a bead of vitreous were lost. The instillation of a drop of eserine, and the application of a cold compress completed the operation. The man walked home after about two hours. The corneal wound healed nicely, and I thought he was all right.

On January 1, 1885, he came into my office, and said he felt a "little splinter" in his eye. On looking at the scleral wound I thought I discovered a minute speck of steel. I carefully reopened the scleral wound and introduced the point of a Grüning magnet behind the iris. I found two small splinters of steel on the magnet when I withdrew it. I introduced it twice again, but got nothing.

From this time on, the patient made an uninterrupted recovery. There was no reaction from the second operation. The piece I removed on Dec. 26th weighed 162 milligrammes (two and one-half grains), is six mm. long, five mm. broad, and one and one-half mm. thick. I last saw the patient on January 1, 1886. He has suffered no pain for a year. The iris has lost its natural color, and the globe is somewhat shrunken, but there is still good light perception; T—.

An interesting question in this case is, Where was that piece of steel during those ten weeks? I think the absence of pain until December 23d, with its sudden appearance on that day, and the consecutive congestion of the eye, lend force to the hypothesis that when the foreign body entered the eye it became lodged and partly encysted in the upper and inner

[1] Knapp: Arch. Opth., ix., 2, Case 1.
[2] Minor: Arch. of Ophth., xii., No. 1.
[3] Arch. Ophth., x., 4.

periphery of the choroid and retina. In some way, about December 23d, the piece became loosened from its attachments, fell against the ciliary bodies, and thus set up the pain of which the patient complained at the time. After once being loose in the vitreous chamber, the substance probably found less resistance in the direction of the original wound than in any other. Usually the passage of a foreign body through the vitreous leads to its disorganization, and if the substance is loosened from any attachments it may form, it will drop to the bottom of the vitreous chamber.

I was somewhat surprised that cyclitis did not follow my rather free manipulation of the eye. Concerning this point, it would have been better to use the magnet at the time of my first operation.

I do not consider that my patient is entirely free from the dangers of sympathetic ophthalmia, and shall not be surprised at any time if called on to enucleate the eye.

NOTE ON REMOVAL OF THE UTERINE APPENDAGES.

BY LAWSON TAIT, F.R.C.S., M.D.,
OF BIRMINGHAM, ENGLAND.

I AM induced by a paper which has recently been published by my esteemed friend, Dr. G. Taber Johnson, in the proceedings of the American Gynecological Society, to draw attention once more to a certain kind of confusion which is constantly being evinced by writers on this question.

In the second sentence of Dr. Taber Johnson's paper, he says "that he has simply to add to the statistics of oöphorectomy his little quota of four cases and a few remarks upon early diagnosis and earlier operations in the distressing class of cases which are finally relieved by Battey's or Tait's operation." The confusion of which I complain, and against which I have to remonstrate three or four times a year, exists in the use of the word *oöphorectomy*, and in the use of Battey's or Tait's operation as meaning the same thing. I object altogether to the use of the word *oöphorectomy*, and the confusion that I complain of arises entirely from the persistency of its use. If it were banished, and the simple English phrase "removal of the appendages" employed, we should at once get rid of this objectionable confusion.

I also object altogether to any operation which I perform or advocate being considered as the same thing as that which is known as Battey's operation. Battey clearly defined his operation to be a proceeding for the purpose of indirectly curing reflex symptoms by bringing about an artificial menopause, and therefore the term "normal ovariotomy" was used for it. The operation which I indicate is that of removing diseased uterine appendages, etc., in the case of myoma of the uterus, removing the appendages in order, by the arrest of menstruation directly, to cure the disease. Dr. Taber Johnson's cases were instances of Battey's operation, not in the least resembling Tait's.

In Dr. Taber Johnson's first case, operated upon on August 17, 1882, he removed both ovaries and one Fallopian tube. For several months after, she had no periods, and no spasms, and she greatly improved in her general health and appearance. Gradually her menses returned, and with convulsions in mild form, so that now, three years after her operation, she is menstruating with more regularity than ever, but with less frequent and much less severe attacks than formerly. From the history Dr. Taber Johnson gives of the case, it is perfectly clear that this is really a case of Battey's operation; it is not a case of my operation, because the patient has not been cured by the removal of both tubes, and that is essential, according to my views, for the proceeding. Dr. Taber Johnson very properly argues upon this question by Battey's theory, and performs Battey's operation. But the case has not been so successful as his other cases, because the operation of "oöphorectomy" was performed, and not that of the removal of the uterine appendages.

In his second case he removed the ovaries and tubes, and the patient made a perfect recovery. She was sitting up in a fortnight, and has not menstruated since, because he removed the appendages.

In the third case, also, Dr. Johnson removed both ovaries and tubes, and the patient made an excellent recovery, and continues to this day to be a marvel to herself and friends.

The fourth case was, unfortunately, fatal, and therefore I can say little or nothing about it, but it is perfectly clear from the result obtained in the three successful cases that Tait's operation and Battey's operation are altogether different things, and, if Dr. Johnson will allow me to say so, I think my operation is founded on altogether different conceptions of physiology and pathology.

I desire particularly to draw attention to a sentence in Dr. Taber Johnson's paper, in which he attributes, what he is kind enough to say, is "my own wonderful success," to the fact that I make "my diagnosis early before my patients are exhausted, and that I operate when their powers of recuperation are yet good, and under circumstances free from any possible septic infection." This appears to be the case, judging from the histories narrated in his recent paper upon his "Modern Treatment of Uterine Myoma."

Concerning the statement that Dr. Johnson makes that my operations are performed under circumstances free from any possible septic infection, I do not quite understand from what he makes that assertion, because I really do not know anything about it myself. I have long since ceased to believe in anything which is conveyed in the ordinary sense of the word septic. I have ceased to take any kind of precaution against the so-called septic poisons or germs, and I do not believe that they do the least harm. Therefore the statement which Dr. Johnson makes is, so far as I know anything about my own works, absolutely without foundation.

Another of Dr. Johnson's statements is that I make my diagnosis early. I make my diagnosis as early as I get my patients, but I get them in all stages of the disease, from the acute attacks to the suffering women who have gone for fifteen or twenty years with the disease in continuous and increasing progress. I get them exhausted in every conceivable

way, and if Dr. Johnson is under the impression that I get a series of selected cases with little or nothing the matter with them, he has not availed himself of the detailed descriptions which I have given of my operations, and of the pathological appearances of the parts removed. A large number of these preparations are, I believe, in the Army Medical Museum at Washington, to which I presented them, and therefore they are easily within Dr. Johnson's reach, and there can hardly be an excuse for the statements he makes.

Further on in his paper, Dr. Johnson says "that I operate early and find few adhesions." This he bases on the paper which I wrote on the "Modern Treatment of Uterine Myoma," and, of course, in cases of myoma there never are adhesions; but he is speaking in his paper entirely of chronic inflammatory disease of the uterine appendages, and in every one of my cases of that disease there are adhesions, and adhesions of the most terrible kind, involving, as I have repeatedly said, laceration of intestine. If he will only look at the preparations in the Washington Museum, he will find abundant evidence of this. It is, therefore, not the secret of my success either that I operate early, which unfortunately I am not allowed to do, or that I find few adhesions. There are adhesions in certainly ninety-five per cent. of my cases.

These mistaken ideas on the part of Dr. Taber Johnson are due entirely to the fact that he is mixing up the facts of two different operations for two totally different diseases in which the circumstances are not in any way analogous, and his use of the word "oöphrectomy" is to be blamed entirely for this confusion.

Let me further say, that the case to which he alludes, in the hands of another surgeon, in which the adhesions were so great and so extensive as to necessitate the making of a large incision, the drawing out of the intestines, and continued manipulation in the pelvic cavity for nearly two hours before the operation could be completed, is simply disgraceful to surgery. No kind of adhesions necessitate an incision larger than will admit two fingers; the extension of the incision and the pulling out of intestine do not facilitate the proceedings one bit; and no kind of adhesions justify an operator continuing to operate for two hours. Anyone who requires such a time should cease to operate, and no kind of adhesions should delay the operation more than twenty to thirty minutes. The conclusion that I have come to, after the explanations which are advanced by Dr. Johnson and others concerning the success in these operations, is that it is due to their skilful and rapid performance and not to any outside cause; that, in fact, Dr. Keith was perfectly right when he said many years ago that we had been ready to blame every other cause than our want of skill and our want of experience for our failures.

If I may repeat in summary what I have said over and over again about this kind of work, I would say that it should be divided into three classes, as follows:

1. Cases in which, in the words of Battey, it is proposed to relieve reflex symptoms by an artificial menopause. In such cases the appendages are not diseased, as in Dr. Taber Johnson's they were not. The results of the proceeding are unsatisfactory, and though an occasional success or improvement in the patient is met with, the operation must be entirely devoid of mortality if it is to be justified at all. I do not encourage its performance. It was first performed by Battey, with a fatal result, on August 17, 1872, and therefore, if proper names are to be given to the operations, it deserves to have Dr. Battey's name attached to it.

2. Removal of the uterine appendages for uterine myoma. This operation I have performed now some hundreds of times with the most brilliant success both in primary mortality and in secondary results. It was first performed by me on August 1, 1872, with a successful result. I am, therefore, entitled to have this operation described by my name.

3. Removal of the appendages for organic disease, chiefly chronic inflammatory change, such as pyosalpinx, hydrosalpinx, hæmatosalpinx, and chronic ovaritis with adhesions. This proceeding I practised first on February 11, 1872, with a successful result, and since then hundreds of women have, by its means, been relieved from suffering otherwise incurable, and many have been saved from impending death. This operation also deserves to have my name attached to it.

I cannot too strongly insist that the principles on which the operations are founded are wholly different in the three classes of cases; that the details of the operations differ wholly in the three cases from the moment the peritoneum is opened; and, finally, that their methods of recovery and convalescence are wholly different and distinct.

EXCISION FOR CHRONIC DISEASE OF THE SHOULDER-JOINT.

BY LEROY W. HUBBARD, A.M., M.D.,
OF NEW YORK.

THERE are two facts in relation to shoulder-joint disease which must impress themselves, it seems to me, upon the mind of every student of orthopædic surgery. First, its extreme rarity as compared with chronic disease of the other major articulations, especially those of the lower extremity. Secondly, that while spinal, hip, knee, and ankle disease occur most often in young children, and about as frequently in one sex as the other, disease of the shoulder-joint, of a similar character, on the other hand, generally is met with in youth or adult life; and the number of males affected far exceeds the females.

The first proposition is so self-evident that it scarcely needs proof. The reports of Guy's Hospital show that disease of the shoulder-joint constitutes less than one per cent. of its cases of joint disease; and I am sure the records of our own institutions would not present a larger percentage. In support of the second, I may mention the report of Culbertson upon excision of the shoulder, in the *Trans-*

[1] Read before the New York Orthopædic Society, January 4, 1886.

actions of the American Medical Association for 1876. He collected the records of ninety-five cases of excision for shoulder-joint disease, covering a period from 1768 to 1876. Of these ninety-five cases, only seven were under ten years of age, the age of thirteen was not reported, and the age of the majority of the remaining was over twenty years. Moreover, sixty-nine of the ninety-five were males. I have not been able to find a satisfactory explanation of these somewhat remarkable facts. It is evident that the theory of traumatism alone or better protection from cold will not explain them. Clearly, the shoulder is as much exposed to cold as the hip, and dislocations of the joint, sprains, fractures of the humerus near the joint, fractures of the clavicle, etc., produced by severe traumatism, direct and indirect, are not uncommon either in children or adults. The testimony of authors is that acute synovitis of the shoulder, either traumatic or rheumatic, is rarely followed by chronic joint disease.

Perhaps when we better understand the etiology and pathology of chronic joint disease we may arrive at a correct solution of the questions involved. The experiments of Rosenbach, Kœnig, and others, whose results have not been published, establish the fact that in the majority, if not all cases, chronic joint disease is tubercular in character. While the bacillus tuberculosis cannot be demonstrated in every case, yet it has been often found and pure cultures have been made, which have produced tuberculosis when inoculated upon healthy animals. Indeed, the evidence is so strong that I am convinced that the presence of the bacillus tuberculosis is almost a *condtio sine qua non* for the development of chronic progressive arthritis. Although this theory may not be accepted as proven, one thing is certain: viz., that, as a rule, whether the disease begins in the synovial membrane or in the head of the bone, its tendency is toward a progressive retrograde metamorphosis, and unless the morbid process is checked by the conquering vitality of the tissues, or is destroyed by operative interference, complete disintegration of the joint will result. There are, undoubtedly, some cases of disease at this articulation, as at others, where the process is a slow one, and seems to limit itself; and while there is no extensive destruction of tissue, the functions of the joint are never perfectly restored. When the disease begins in the head of the humerus in adult life, and I have shown that the majority of cases belong to that period; the epiphysis having been united to the shaft, the morbid process tends to invade this portion of the bone also.

The disease here, as in other joints, is insidious in its onset and slow in its development. While, in many instances, there is a distinct history of traumatism, it may appear without any known cause. The symptoms following the traumatism may disappear, to be followed after weeks or months by others. Whether there has been a traumatism or not, usually the first symptoms which call the patient's attention to the shoulder are slight pain accompanying limitation of motion, or what the patient calls a "stiffness" especially marked in the morning. He may perhaps notice a slight swelling around the joint. Rheumatism is often suspected, and the patient either "doctors himself" with home remedies or calls upon his family physician.

The symptoms are so vague and obscure to one who has not had much experience with joint disease that a mistake is easily made, and rheumatism, a wrench, or some slight cause, is made to explain the phenomena present. Before long, however, the signs of the trouble become more clear and "he who runs may read." The stiffness increases, until there is practically no motion at the joint, pain becomes a severe and constant symptom, the muscles around the joint, especially the deltoid, atrophy, and the bony prominences stand out in bold relief. Generally, sooner or later, a fluctuating swelling with varying symptoms appears, which finally opens, discharges a quantity of thin flaky or curdy pus and leaves behind a sinus. In the meantime, the general health begins to suffer; the patient loses his appetite, emaciates, and possibly has slight chills followed by fever and sweats. The exhaustion which this condition produces prevents him not only from earning a livelihood, but soon confines him to bed.

Occasionally one is fortunate enough to see a case in the early or prodromal stage of the disease, but usually the advice of the surgeon is not sought until some period of the late stage is reached.

Discarding as irrational and useless some of the procedures once recommended for this trouble, viz., blisters, cauterization, setons, etc., the treatment of shoulder-joint disease may be included under two heads. First, the conservative method; secondly, the operative. By the former, an attempt is made absolutely to protect the joint from injury by some form of apparatus which will immobilize it, and, if possible, produce some separation of the joint surfaces, while nature cures the disease by restoring vitality to the tissues; by the second, the object sought is a cure of the difficulty by removal of the diseased structures.

The advocates of the first method claim that it is conservative, that an operation, something so much dreaded by everyone, is thereby avoided, and that it is perfectly safe. The advantage claimed by the first two propositions I grant, but must deny the last. If this disease is tubercular in character, and has a strong tendency to progress, involving the structures around the joint, may it not easily become a focus of infection from which tuberculosis may be conveyed to such vital organs as the brain and lungs? If this danger appears to exist more in imagination than in reality, though the post mortem soon furnishes proof of it in cases of other joint disease, we all must be aware of the danger of amyloid degeneration of the liver and kidney from prolonged suppuration.

As a matter of fact, we know that tubercular meningitis, acute tuberculosis, and the various forms of amyloid degeneration carry off many of our patients suffering from chronic disease of the other joints.

I am aware that some excellent results have been obtained by various forms of apparatus and, if a case is seen early, where there is a chance of aborting the disease, or if it is a case which has progressed

slowly with little destructive tendency, the conservative method should be tried. But, in the majority of instances, we do not see these cases until the disease has well advanced, and it is here that delay is dangerous.

Owing to the loose muscular attachments of the shoulder to the trunk, it is difficult to fix the joint or produce extension by any apparatus which can be worn comfortably by the patient, and even if this can be accomplished, the patient must receive constant care for weeks or months, at the hands of the surgeon. Moreover, even after this long and expensive course of treatment, a complete and perfect restoration of motion to the joint cannot be promised, and there is constant danger of a return of the disease from a subsequent traumatism. The negative evidence in favor of excision is, therefore, very strong in the majority of cases.

But we are met at the outset by the objection that excision is a serious and dangerous operation, and therefore it ought to be resorted to only when life is in danger.

That excision of the shoulder is a serious operation, and requires a certain amount of anatomical knowledge and technical skill on the part of the operator, I admit, but that it is a dangerous operation I am disposed to deny.

Among the 95 cases referred to, 14 deaths are reported. In 6 phthisis was the cause, occurring from three months to one year after the operation; one patient died of variola, and one of amyloid degeneration of the liver, three and one-half months after. The remaining 6 deaths may, perhaps, be attributed directly or indirectly to the operation. Of these, 2 died of pyæmia, 1, a man sixty-five years of age, of exhaustion, 1 of pleuro-pneumonia, 1 from uræmia, and 1 from diarrhœa. 6 out of 95, or about 6 per cent. If we examine the results as regards the usefulness of the limb, we find that 52 of the number are reported as having perfectly useful limbs, while of the remaining 37, only 2 had useless arms, the others being able to perform, more or less well, all the functions belonging to a sound limb. It must be remembered that these statistics cover a period of over one hundred years, during sixty of which, anæsthetics were unknown; also that none of the operations was performed in the careful and thorough manner, with the same attention to asepsis, employed by the best surgeons of to-day. Our results at the present time ought to be much more favorable both as to mortality and the usefulness of the limb.

If the operation, therefore, is reasonably safe, and ultimate good use of the limb can be assured, it is clearly advantageous to perform it early, or at least as soon as all hope of arresting the progress of the disease is abandoned. Time, an important element in most instances, is thereby gained. Moreover, by operating early, the general health of the patient being unimpaired, a more speedy and favorable recovery is probable. Again, it is important to operate before there is extensive destruction of bone and periosteum, for, as a rule, the less bone removed the more favorable will be the result, so far as the restoration of function of the limb is concerned. Lastly, the difficulties and dangers of the operation are much less when the soft tissues are in a healthy condition, and the periosteum can be easily separated from the bone.

The advantages of the operation over the conservative method, in every case except where the disease is in the early stage, may be summed up as follows:

First, the probability of as good, if not better restoration of the function of the limb.

Second, the shorter time that will elapse before the patient will be able to use the limb.

Third, the immediate improvement in general health which follows removal of the diseased tissue.

Fourth, the removal of a possible source of general infection without causing any deformity, or preventing the patient from engaging in the ordinary pursuits of life; objections which are strong against the excision of the joints of the lower extremity.

Only a brief mention of the details of the operation is necessary here, as they are found in every text-book on surgery. The straight incision, beginning just below the acromion and carried downward and outward along the inner border of the deltoid, will be the most useful in the majority of cases, affording complete access to the joint, and leaving a favorable wound for repair. A subperiosteal operation should be done in all cases possible, and as soon as the periosteum is divided, all the subsequent work can be done with a blunt dissector. Careful attention to asepsis in all its minute details should be observed. Only the diseased bone should be removed, and it is better to make several sections than to remove too much at once. If the glenoid cavity is diseased, it must be thoroughly scraped till healthy bone is reached. Free drainage is secured by a large tube, passing deeply into the cavity of the joint, and out at the lower angle of the wound. Any dressing may be used, provided it is thick and strictly aseptic. Splints are unnecessary, as the arm may be firmly confined to the side by turns of a roller bandage. There should be but little febrile reaction, and, as a rule, the first dressing may be left on a week or ten days; at the end of that time, the wound will probably have completely healed, except where the drainage tube projects, which may now be removed. At the end of another week, passive motion may be begun, together with electricity, massage, douching, etc., to the wasted muscles. Very soon light exercises may be performed, which may be gradually increased until, in two or three months, the surgeon may expect to see all the functions of the joint restored, except the ability to raise the arm above the head.

In conclusion, I will add a brief report of a case which came under my care while an interne in Bellevue Hospital. This case illustrates some of the points I have tried to bring out in the preceding remarks.

A. W. æt. twenty-two, an American, was admitted to the hospital July 21, 1884. Family history good, and previous to present trouble had always enjoyed good health and been able to do hard work. About two years previous to admission, while employed in the woods, he attempted to throw an axe at a distant object, but the

blade caught upon the limb of a tree behind him, producing a severe wrench or sprain of the right shoulder. Some pain, swelling, and disability followed, but the symptoms subsided and he went about his work as usual, though he noticed the joint was a little stiff in the morning, and after a time the muscles began to waste. This accident was followed a year later by a fall upon his right elbow. Now he was unable to use the arm, the stiffness increased to practical immobility, and after a few months a swelling appeared, which was opened and discharged pus.

His case was diagnosed as rheumatism, a strain, etc., and favorable prognosis given. For the last few months he had lost flesh, been unable to work, and suffered almost constant pain. The appearance of the man indicated long-continued suffering; he was pale and emaciated, carried his right arm close to his side, supporting the forearm with the other hand, and was unable to dress or feed himself. Examinations showed extreme atrophy of the deltoid and other muscles, and the presence of a small sinus on the inside of the arm about two inches below the axilla, through which it was impossible to touch dead bone with a probe.

All attempts at motion in any direction were resisted by reflex spasm and gave great pain. He was put upon tonic treatment for a few days, and on July 30th, assisted by Dr. J. W. Wright, the visiting surgeon, and by members of the house staff, I excised the shoulder. The skin in the neighborhood of the joint was carefully cleansed and disinfected with a solution of hydrarg. bichlor. 1 : 2000, and irrigation with this solution was continued during the whole operation. Four inches of bone were removed in sections before healthy bone was reached. The glenoid cavity was found to be diseased, and was thoroughly scraped. The hemorrhage, which was slight, was entirely controlled and the incision closed with a continuous catgut suture, after two large drainage tubes had been placed in the cavity of the joint. The sinus mentioned was in such close proximity to the large vessels that it was not deemed safe to open it throughout its entire extent, and it was therefore scraped with a sharp spoon and washed with the bichloride solution. The dressing consisted of iodoform, carbolized gauze pads, and borated cotton. The arm was confined to the side, with the forearm across the chest, by turns of a roller bandage.

The patient never complained of pain after the operation, and although he had some febrile reaction for a few days, the result proved that it was not due to the condition of the wound. The first dressing was removed fourteen days after the operation, when complete union by first intention, without a drop of pus in the dressing, was found to have taken place throughout except where the drainage tube projected. This was removed and in ten days union was complete, and the sinus also was perfectly closed. Passive motion was then begun, and electricity, massage, douching, etc., were applied to the wasted muscles. September 19, fifty days after the operation, he was discharged from the hospital, having been using light exercises for several days, able to dress and feed himself, and having gained fifteen pounds in weight.

In December of the same year he began to work in a planing mill and has ever since earned the same wages as the other men, supporting a wife and family.

I saw the patient December 5, 1885, and found about one and a half inches shortening of the limb with one and a quarter inches less circumferential measurement as compared with the opposite side. The muscles were fairly well developed, and he told me he had a few days previously lifted seventy-two pounds with the right arm. All the motions were good except the ability to raise the arm out from the body when extended at the elbow.

This disability seemed to be due to the fact that so much bone had been removed that the fulcrum of the lever was lost, and not to deficiency of power in the deltoid. If the operation could have been performed earlier before such extensive destruction of bone and periosteum had taken place, I am confident the result would have been much better.

130 WEST TWENTY-FIRST STREET.

BRAIN OF A DEMENT WITH NUMEROUS CALCAREOUS DEPOSITS SCATTERED THROUGHOUT BOTH HEMISPHERES AND CEREBELLUM.[1]

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THE patient was a woman, aged about forty-five or fifty years. She suffered from dementia interspersed with brief periods of excitement. The latter, however, did not differ from such as are frequently present in patients in whom no lesions similar to the ones about to be described are found. She also had phthisis.

The autopsy was held about seventeen hours after death. The calvarium was rather thicker than normal, though the dura presented nothing unusual. The pia and arachnoid, however, presented opacities and thickening over the entire surface of the brain. The lateral ventricles were somewhat dilated. The velum interpositum was thickened, and the choroid plexuses pale and cystic. On making section of the brain, the knife came in contact with hard calcareous particles, scattered through the substance of the hemispheres; they varied in size from a quarter of an inch or more in diameter, to scarcely appreciable sand-like fragments. They were largest and most numerous in the regions supplied by the nutrient branches of the Sylvian arteries—*i. e.*, the internal capsule, the head of the caudate nucleus, and the lenticular body. Toward the cortex they disappeared altogether. An examination of the cerebellum revealed similar bodies scattered in and about the dentate bodies of both lobes.

Examination of the lungs revealed extensive tuberculosis, phthisis being the immediate cause of death. No calcification of the tubercles had taken place. Examination of the heart did not reveal any calcareous deposits either in the valves or great vessels. The kidneys were not sclerosed.

A number of the calcareous particles found in the brain were removed from the tissue in which they were embedded and were then decalcified. Sections were cut and mounted as usual. The microscope revealed an enormous mass of irregular bodies, which were, for the most part, more or less cylindroid in shape. They were gnarled and twisted, and so densely packed that in some instances their nature could only be determined with difficulty. They proved to be vessels, the walls of which were much thickened, and in which extensive deposits of lime salts had taken place. In many instances the lumen of the vessels could readily be distinguished; in others again, the lumen was entirely obliterated. In most

[1] Read before the Pathological Society of Philadelphia.

cases it was exceedingly small. The process of calcification had, evidently, taken place throughout the walls of the vessels; though some of the smaller ones presented a mammillated appearance, as though the deposit had been in the form of an incrustation on the outer wall.

The tissue between the vessels, and, also, that surrounding the nodules, showed an extensive proliferation of nuclei. No undoubted evidence was present of any direct calcareous deposit in the neuroglia, or in the true nervous elements. It is not improbable, however, that some of the smaller masses represented the calcified detritus of softened nerve tissue, but in almost every instance a more or less distinct vascular form could be made out. The most striking appearance under the microscope, was the enormous number of the vessels, but at the periphery of a nodule they would thin out and frequently presented dilated lymph-spaces.

The examination of the cortex also revealed a marked increase in the number of vessels and a general proliferation of the neuroglia. The most noteworthy point, however, was the shrunken appearance of many of the ganglion cells, together with a great dilatation of the pericellular spaces.

Although calcareous deposits are known to take place in the falx, the tentorium, the dura, the pia, the main cerebral arteries, and even in the choroid plexuses, cases like the one described appear to be extremely rare. In 1850, Delacour[1] described a case of imbecility, in which small, hard, rough masses were found scattered throughout the centrum ovale. They were more especially noticed in the regions of the striated bodies, in the centre of each of which a hard substance, the size of a bean, was found. Delacour correctly interpreted these appearances as being due to the calcification, here and there, of the smaller vessels. The principal trunks were not affected. It is also of great interest to note that no calcareous deposits were observed in other portions of the body. This case, therefore, closely resembles the one before us.

In 1852, Rainy[2] reported the case of a man who had died of inflammation of the hand "with purulent absorption." No symptoms of brain disease had been noticed during life, but on making sections of the brain, sharp spicula or bristle-like projections were discovered on the cut surfaces. They were, evidently, ossified vessels. The trunks of the smaller ones were of their natural size, but the minutest ramifications and the capillaries were much enlarged and altered in appearance, looking more like globules of oil joined together, than like bloodvessels. This appearance, judging from Rainy's illustration, closely resembles that observed in some of the vessels in the present case—the mammillated appearance already mentioned.

Again, in 1855, Bamberger[3] described the case of an epileptic dement, in which the smaller vessels of the brain were converted into a long, brittle framework, and which projected like so many wire points from the cut surface. Besides, in the corpora striata were found foci filled with yellow, stony conglomerations.

In 1856, Virchow[1] likewise described a case of dementia in which he found extensive calcification of the smaller vessels of the white matter of the brain. On section they stood out like bristles. Virchow explains this case as being one of metastatic deposit, there being marked atrophy of the cranial bones, as well as arthritis deformans.

In 1863, Marcé[2] reported a case of complete dementia, in which the brain had undergone much disintegration from bloody infiltration, and in which the cut surface felt rough, like the tongue of a cat. The calcareous deposits were, for the most part, aggregated and quite large. The capillaries appeared as though incrusted.

In 1866, Hubrich[3] reported two cases, both dementia, in which bristle-like projections were noticed on the cut surfaces. They were found variously in the general white matter, the corpora striata, the optic thalami, cerebellum, etc. They could, in some instances, be drawn out of the tissue in which they were embedded, ranging at times from a half to three-fourths of an inch in length. Their nature was, of course, apparent.

Of the above cases, which are the only ones thus far reported, that of Delacour resembles, most closely, our own. In his specimen, he found merely nodules of calcareous material. He makes no mention of the bristle-like appearance described by the other writers. This, it will be remembered, is also absent in the brain before us. Bamberger, on the other hand, records both lesions. He describes both the hard nodules, and the bristle-like appearances. In the other cases, five in number, the nodules were absent, the bristle-like appearance alone being present.

Evidently, we have here two lesions which are closely allied. The difference between them we find to be more apparent than real, especially when we come to consider the probable method of their formation. Rokitansky, in his admirable *Lehrbuch der Pathologie*, 1856, vol. ii. p. 472, in giving a general description of calcareous deposits in the brain, based on Bamberger's case, explains them by supposing an encephalitis, in which the nervous elements disintegrate and become calcified; also that there is a sheath-like incrustation of the vessels. I believe this supposition to be, in the main, correct, and it accords most happily with what we know of the lesions of dementia in general. In the case just described, for instance, we have the general meningo-encephalitis so common in dements, and which is evidenced by the condition of the pia and arachnoid, and by the general increase of the neuroglia. The areas in which the concretions were found were probably foci of encephalitis, of greater intensity than elsewhere. In these foci, inflammatory changes in the walls of the vessels became pronounced, beside which, the vessels increased enormously in size and number; so marked is this increase, that these foci could, with perfect propriety, be called angiomata. At the same time, proba-

[1] Gazette des Hôpitaux, Paris, 1850, ii. 107.
[2] Trans. Path. Soc. London, 1852–53, iv. 117.
[3] Verhandl. d. phys. med. Gesellsch. zu Würzburg, vi., 1855; also cited by Rokitansky, Lehrb. d. path. Anatomie, ii. 474, 1856.

[1] Archiv, ix. 4, p. 620, 1856.
[2] Bull. Soc. d'Anat. de Paris, 1863, xxxviii. 468.
[3] Zeitschrift f. Biologie, Munich, 1866, ii. 377.

bly, the neuroglia underwent proliferation, and a corresponding destruction of nerve tissue ensued. Then, doubtless, the calcareous deposit took place. Why such deposit should have taken place in the brain and not elsewhere, is, of course, a matter for speculation.

In regard to the five reported cases in which no nodules were found, the encephalitis, no doubt, lacked a focal character. The lime salts were simply deposited in a diffused manner in the inflamed walls of the arterioles and capillaries.

MEDICAL PROGRESS.

DIAGNOSIS OF SACRO-ILIAC INJURIES.—DR. E. A. LEWIS, in the *Medical Analectic*, condenses as follows the points of diagnosis in injuries of the sacro-iliac articulation:

1. History of case: Rotation of the pelvis under severe pressure, or any force acting as a wedge between the sacrum and innominate, may injure the articulation without complete separation and deformity. 2. Symptoms usually associated with those of contusion of the hip differing in this: the slightest lateral pressure on the pelvis is unbearable. 3. Patient is able to be assisted to the erect posture and walk, with crutches, sometimes before he can lie on either side. 4. Great length of time before patient can walk with comfort, and frequently permanently incapacitated for active work. 5. The uninjured side is used as a pivot upon which to swing the pelvis and thus save the strain on the affected articulation. The foregoing points in diagnosis are prominently stated. The results may be permanent defect in walking, and weakness of the articulation.

Points in Differential Diagnosis.

Contusion.	*Injury to Sacro-iliac Articulation.*
Cause: a direct blow or fall.	Cause acts as wedge between sacrum and os innominatum, or rotates the pelvis under severe pressure.
Thigh of affected side will not render passive motions.	Thigh of affected side may be freely used without causing pain.
Patient can be turned or turn after short time without causing severe pain.	Patient cannot turn nor be turned on either side for a long time, and can walk about some before being able to endure any lateral pressure.
Patient suffers pain in soft parts surrounding the hip-joint.	Patient suffers no pain when lying quietly on back, unless the injury is accompanied by contusions.
Patient recovers completely in a few days, or, at most, weeks.	Patient does not recover for months, and frequently the injury is permanent.
There is apt to be ecchymosis and tenderness on pressure over the soft parts.	There is no ecchymosis, and pain on pressure is only felt when the force is applied to the bony pelvis, and then at the seat of injury—*i. e.*, the articulation.

The explanation of the symptoms of pain on lateral pressure and ability to stand erect and walk is explained by the angle of the pelvis (60 to 65 degrees), so that pressure from above or below brings the articular surfaces closer together, and does not bring any strain on the ligaments. Lateral pressure, on the other hand, separates the articular surfaces and puts the ligaments on the stretch.—*St. Louis Med. Review*, April 10, 1886.

TEST OF THE QUALITY OF COCAINE.—The *London Medical Record* states, on the authority of the *Pharmaceutisch Weekblad*, that the presence of hygrine and egonine in the hydrochlorate of cocaine may be detected by treating the salt with cold concentrated sulphuric acid. If the salt is pure, the result is a completely colorless solution. The impurities will stain the solution.

PALLIATIVE TREATMENT OF UTERINE CANCER.—DR. GACHES SARRANTE, in an article on the treatment of inoperable uterine cancer, thus summarizes the results of his experience.

In cancer of the uterus, frequent dressing with liquids, powders, or other antiseptic agents presents the following advantages:

1. When regularly applied, they suppress absolutely the hemorrhages, even when rebellious.

2. They modify the nature of the lesion by removing the putrescent products which form on its surface, and give it the appearance of a healthy sore.

3. At first they calm the pains, which later return with increased intensity, finally to cease definitely.

4. They prevent the absorption of infectious products and thereby greatly improve the general health of the patient.

5. They moderate the extension of the lesion, and prevent extension by contiguity to the vagina and bladder.

6. Finally they permit the patient to live the life of the world at large, and, so to speak, to dissimulate their malady.—*Nouvelles Arch. d. Obstet. et de Gynéc.*, March 25, 1886.

IODIDE OF POTASSIUM IN SPASMODIC ASTHMA.—DR. ORMEROD has tabulated the details of thirty-six cases of spasmodic asthma treated by the internal administration of potassium iodide, and expresses his results as follows:

The iodide was given alone, or if in combination only after the effect of the uncombined drug had been watched. It proved a failure in nine out of the thirty-six cases—*i.e.*, only in twenty-five per cent. Its good effects were not limited to the uncomplicated cases. The cases in which the asthma appeared to be distinctly secondary to chronic lung disease are indeed too few to say much about; but in some of them at least it did good. The symptoms most amenable to the drug were certainly the nocturnal attacks of dyspnœa: its effect on them was often remarkable; thus in many cases they disappeared altogether; in others they were much reduced in frequency and severity. But a troublesome cough, or a certain shortness of breath on rising in the morning, often persisted. That the nocturnal attacks were really controlled by the iodide was shown by the unwelcome, but noteworthy fact, that they recurred (in many cases) whenever the drug was stopped. It has, therefore, the effect of relieving rather than curing. Five or ten grains three times a day suited best in most cases; in some a larger or smaller dose did better. In some an increase of the dose did good for a time, but the effect seemed to wear off.—*The Practitioner*, April, 1886.

Drainage of Idiopathic Intracranial Abscesses.—The evacuation of traumatic abscesses of the brain has long been a recognized procedure, and has met with a fair measure of success. Recently Mr. Hulke has endeavored to extend this practice to idiopathic abscesses within the cranium. A few months ago a man was admitted into the Middlesex Hospital, under Dr. Cayley, suffering from coma, which had supervened upon a long standing purulent discharge from the ear. There were no localizing symptoms. Mr. Hulke trephined the skull in the lower part of the temporal fossa, and by means of a director explored the temporo-sphenoidal lobe, without result. The operation was unattended with ill-results, but after the patient's death, a few days later, an abscess was found in the cerebellum. Quite recently a woman was under Dr. Cayley's care with similar history and symptoms, and intracranial suppuration was diagnosticated. Mr. Hulke determined to explore the brain. In this instance he made an aperture in the cerebellar fossa of the occipital bone, and through a small incision in the dura mater he passed a director through the cerebellum in all directions, but without striking an abscess. Finding that the symptoms were unrelieved, he subsequently trephined the temporal fossa, and opened an abscess in the temporo-sphenoidal lobe. We believe these cases will be duly reported to one of the medical societies. They mark an important advance in cerebral surgery, but further comments upon them must be deferred until all the facts are before us. —*The Lancet*, April 10, 1886.

Diet in Albuminuria.—After passing in review the principal theories which have been given regarding the pathogenesis of albuminuria, Nollet offers the following conclusions:

1. Milk diet has as yet given the best results in the treatment of albuminuria.

2. This method is not applicable to all forms, and if too prolonged may produce serious inconveniences for the patient.

3. The albuminuric should avoid large meals, eating frequently, but little at a time.

4. Individual susceptibility must determine the sorts of animal food least injurious to the patient.

5. Fish appears to favor the passage of albumen into the urine.—*Gaz. Méd. de Paris*, March 6, 1886.

Toxicity of the Urine in Puerperal Eclampsia.—M. Doleris has found that some specimens of the urine of patients with puerperal eclampsia give, on drying, crystals the composition of which is at present undetermined, but which are slightly soluble in alcohol and soluble in acidulated water, and a somewhat concentrated solution of which injected into animals killed a rat and three sparrows, while comparative experiments made with a portion of solution containing no crystals produced no effect. M. Doleris found a normal amount of urea in the blood of two patients dead of the disease, but an increased amount in that of two others who were cured. In one case only were soluble and toxic ptomaines met with. He believes that puerperal eclampsia is of an infectious nature, for it is not only the kidney which is affected, but other organs—the liver in particular presenting characters more or less allied to those noted in acute yellow atrophy.—*Lancet*, March 13, 1886.

Morphiomania.—Dr. Marandon de Montyel summarizes the results of his investigations of the production of morphiomania as follows:

1. Morphiomania has its origin either in a demand for intellectual excitation and psychical pleasure, or in the acquired habit.

2. Injections of morphia have as a result a double action: a benign and a special action upon the nervous system by which its natural function becomes impossible after a certain term without the assistance of the poison. These two effects are separate and distinct from each other: the second is manifested when the first is no longer exhibited. There are, then, two kinds of morphiomania; the one resulting in a temporary good effect, the other a vital necessity; and after a variable period the cases of the first order pass over into the second.

3. This double action of morphia upon the nervous system renders it an extremely dangerous medicament, and it therefore should not be prescribed hypodermatically except in cases of absolute necessity.

4. It is also extremely dangerous to combat morphiomania by the substitution of alcoholics, inasmuch as chronic alcoholic insanity may result therefrom.

5. Morphiomania may always be treated by abrupt withdrawal of the drug, except in conditions when such methods are contraindicated by the vital forces of the patient or concomitant pathological phenomena. The method should also be abandoned if reactionary collapse result.

6. In the treatment of morphiomania by gradual suppression of the drug, it appears advantageous to combine with the progressive diminution of the dose the recoil of momentum by fusing two injections into one.

7. The medico-legal questions pertaining to morphiomania are certainly based more upon extra-judicial than upon judicial clinical observation.

8. Observation shows that a morphiomaniac may have great energy of will while the poison has not yet determined any disorder of intellect. There is here a serious proof of what has already been said, that responsibility only ceases with the period of psycho-physical marasmus.

9. Relative to the responsibility of morphiomaniacs who commit crime or offences to satisfy their passion, it is, perhaps, necessary to distinguish whether they have yielded to the simple appetite for a pleasant effect, or to a physical necessity dependent upon the instinct of self-preservation. A conclusion of irresponsibility in the latter case seems justified.

10. In the exact appreciation of the intellectual troubles caused by the abuse of the hypodermatic injection of morphia, it is important correctly to appreciate the existence of predisposition to insanity, and the delirium produced concurrently by the absorption of other substances, such as alcohol and belladonna.

11. It is necessary to retard the continual progress of morphiomania by disseminating general information in the upper ranks of society concerning the deplorable and certain evil effects following the use of the drug, and to exercise an active surveillance over pharmacists, and impose special penalties upon those who dispense morphia without a physician's prescription.—*Canada Lancet*, April, 1886.

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THE MEDICAL TESTIMONY IN THE LAVERTY CASE.

IMPOTENCE has not infrequently been the question at issue in legal proceedings from the time of the suits of the Countess of Essex and the Marchioness de Langley, in the sixteenth and seventeenth centuries, to the present day. Happily it is becoming more and more rare as a cause of litigation, and the tests, which in those days were applied under order of the Court, are now recognized as both indecisive and revolting. There are, however, still instances in which it is the turning point of civil or criminal actions—the ground for divorce, the defence in rape, etc.—and its probable existence as a physical defect can now fortunately be determined with a much nearer approach to scientific accuracy than ever before.

Sexual potency in the male depends upon the presence of three factors, an emotional or cerebral centre, a reflex or spinal centre, and a peripheral nerve supply, susceptible to the influence of the ordinary stimulation of warmth and friction. If, in consequence of brain disease, or of spinal injury or exhaustion, or of deformity or abnormality of the penis, any one of these requisites is absent, impotence is the almost certain result, and, accompanying it, sterility, or the inability to procreate. When, in addition to such a cause, there exists a mechanical obstacle to the ejaculation of semen, or a condition affecting the physiological formation of the latter secretion, the probability of the two genital derangements—impotence and sterility—being associated in the case is immensely increased.

Thanks to the researches of Lallemand, Liégois, Curling, Black, S. W. Gross and others, there are certain well recognized facts bearing upon the subject, that may be stated somewhat dogmatically. By far the most common cause of impotence is chronic inflammation of the deep urethra, which by its long continuance exhausts the reflex excitability of the lumbar centre; the most frequent cause of this chronic urethritis is organic urethral stricture. When these conditions exist in any case, especially if they have been of long continuance, there is a reasonable presumption of impairment or failure of the genital function, as at least five-sixths of all cases of impotence are due to these causes. If, superadded, there are evidences of disease of the rest of the genital apparatus, such as chronic prostatitis, obstruction of the epididymis, vas deferens, or ejaculatory ducts, degeneration of the secreting structure of the testicles or other similar lesions, the presumption becomes greatly strengthened, particularly if the clinical history furnishes confirmatory evidence.

A case which has just been undergoing trial in a neighboring State, has afforded the latest opportunity for expert evidence on these points: Laverty, keeper of the New Jersey State Prison, was impeached before the Senate of New Jersey for official misconduct, the gravest of the charges against him being that he committed adultery with certain female convicts, who testified that he was the father of their children. With the collateral testimony we have nothing to do: the management or mismanagement of the prison; the opportunities for impregnation of these witnesses by intercourse with other convicts, etc.; but the medical testimony in reference to the impotence of the defendant is unusually interesting. From the stenographic reports of the trial we learn that the following evidence was submitted:

Laverty, who is fifty-six years of age, has been married for thirty-two years, and was the father of eight children, when, in 1872, he was operated upon for an impacted urethral calculus, the operation being followed by double swelled testicle, prostatitis, and excessive urethral hemorrhage, with all the evidences of extensive inflammation of the parts involved. An examination made during the trial by Drs. Agnew and White of Philadelphia, disclosed the following conditions now existent: 1st. A dense, fibrous stricture of the urethra, situated from five to six inches from the meatus, admitting with great difficulty one whalebone filiform bougie, a second failing to pass alongside it. 2d. An extremely hyperæsthetic and inflamed condition of the urethra necessitating the administration of ether for the completion of the examination. 3d. An enlarged, hardened, and tender prostate, the irregular character of the enlargement, the tenderness, and the age of the patient, indicating that the increase in size was probably due to inflammation and not to senile hypertrophy. 4th. An indurated mass in each testicle, the size of the terminal phalanx of the little finger, occupying the region of the globus minor and indi-

cating an old double epididymitis. 5th. A decrease in size—a commencing atrophy—of the right testicle with softening of both it and its fellow.

Upon these results of their examination these medical witnesses testified that they believed it probable that the defendant was both impotent and sterile; that the long-continued urethritis had probably had its common effect of exhausting the spinal centre; that, even if erection were possible, the mechanical obstacle to ejaculation and to complete distention of the erectile tissue offered by the dense, almost impermeable organic stricture would probably cause enough pain to compel him to desist before the completion of the act; that the double epididymitis, by obstructing at that point, on each side, the single outlet from the testicle; that the chronic inflammation of the prostate by causing deviation or obliteration of the ejaculatory ducts; that the changes in the substance of the testicles themselves, indicating a corresponding change in the character of their secretion, all pointed unmistakably in the same direction. They testified, also, that each of these conditions is well known as a competent cause of impotence or sterility, and that their association in the same individual greatly increased the probability of the existence of these genital defects.

The chief medical witness summoned by the prosecution in rebuttal, basing his evidence on the stenographic report of that given by the foregoing medical witnesses, testified that, in his opinion, their conclusions were not warranted by the results of their physical examination, and that he believed the defendant to be capable of the sexual act. When asked whether or not he thought a man with tight urethral stricture, double epididymitis, enlarged prostate, and disease of both testicles, was likely to be competent to perform the sexual act, he said he could not answer without having made an examination—thus admitting that an examination was essential to forming a correct opinion of the case. He did not consider the statement that chronic inflammation of the deep urethra was a fruitful cause of impotence, as intelligible, because he did not understand what was meant by "deep urethra." This, perhaps owing to the great etiological importance of inflammation at this point in its relation to impotence, was the pivotal point of the whole medical testimony of the defence. The term is now used constantly by surgeons, and is found in the works of Van Buren and Keyes, Bumstead and Taylor, and others. He stated, in opposition to the previous witnesses, that the calibre of the urethra is largest when the organ is erect, an important point in the consideration of possible ejaculation in such conditions. Curling, Gross, and other authorities describe it as narrowed during erection, and the increased difficulty of urination or of the passage of instruments during that condition, is familiar to most practical surgeons. He drew a distinction between strictures composed of cicatricial tissue and strictures resulting from urethritis, although it is a well known pathological fact that all organic strictures are made up of cicatricial tissue. He did not know of any cases in which prostatic induration and enlargement had interfered with the procreative powers, although such cases are reported in many of the surgical text books. He denied that double epididymitis frequently produces sterility, although it is usually regarded as one of the most common causes of aspermatism. For instance of eighty-three cases collected by Curling, in only eight did the spermatozoa reappear in the semen. He stated that it was not possible that a dense fibrous stricture of a calibre of only 3 mm. could cause such pain during an attempt at intercourse as to prevent a completion of the act, though Gross and other surgeons report cases of that character. He testified that all strictures are curable, and that he had never met with one which he had failed to cure, although many surgeons of large experience believe that strictures are essentially incurable. Dr. Agnew, for example, says in his *Surgical Treatise*, "the radical cure of stricture is entirely beyond the reach of surgery."

After carefully sifting and balancing the conflicting testimony, the weight of authority on these controverted points is without doubt strongly in favor of the views advanced by Drs. Agnew and White. If, in addition, it be permissible to accept as credible the testimony that the wife of the accused had never been pregnant since the date of the operation spoken of, though previously the mother of eight children, and her sworn statement that for years and in spite of frequent ineffectual attempts he had never succeeded in effecting an entrance—if all these circumstances are considered, or even if the results of the physical examination alone are accepted, there can be no reasonable doubt of the possible influence of these conditions in producing impotence or sterility, or both, and they appear to fully justify the conclusions reached by the medical witnesses for the defence.

The case, however, has other lessons than those derived from its relations to disease and infirmity. As will be seen by our abstract of the testimony, it has furnished another unnecessary example of the public disagreement of witnesses called as experts, which tends to bring discredit upon that class of evidence. The possible effect of such contradictions upon the mind of judge and jury is obvious, and might readily lead to a miscarriage of justice. We say this without reference to the outcome of this particular trial, which will be concluded before this is published, but for the sake of bringing an important practical point definitely before the profession, in the hope that they will use their influence to have the law of

expert evidence so changed that experts shall be summoned as witnesses of the court, rather than of the prosecution or defence.

DIFFERENT METHODS OF TREATING THE VOMITING OF PREGNANCY.

THE question, How do you treat the vomiting of pregnancy? is frequently asked by one practitioner of another. Certainly if the physician has a theory of the etiology of the affection, he can readily give an answer as to its therapeutics; or he may, confessing his ignorance of its cause, mention the various remedies which his experience has taught him are the most successful.

In this country probably there is no eminent practitioner who holds with more tenacity to the uterine displacement theory of the affection than DR. HENRY F. CAMPBELL, of Georgia. In a very interesting paper presented by him at the last meeting of the American Gynecological Society, he used the following language: "Believing, as I do, that the gravid displacement is indeed the true source of all the observed histological alterations of the gravid uterus, and also that this gravid displacement is, as I have said, the *fons et origo* of the gravid nausea, I must urge as my first and last expedient for the relief of all these common evils, arising from a common cause, repeated postural pneumatic reduction in the genu-pectoral position."

Laying aside that which refers to "all the observed histological alterations in the gravid uterus" in this statement, as not pertinent to our present purpose, even if we understood the meaning of the author, we are content with the statement that the gastric disorder of pregnancy is caused by uterine displacement, and is cured by the patient lying upon her knees and chest while air is admitted into the vagina. In the paper several cases are narrated in which the author, acting upon his theory of the etiology of the disease, applied his method of treatment with the most satisfactory results. Now such facts are not to be set aside; the cause of the vomiting as well as its therapeutics, seems to be conclusively established in Dr. Campbell's cases. But is it not going too far to assert that all cases of vomiting in pregnancy are to be similarly treated, and success will be equally certain? Most practitioners hold, and we believe justly, that there are many cases of vomiting in pregnancy in which there is no positional disorder of the uterus. Dr. Campbell has such confidence in his theory of the disease, he even believes that in "many of the cases treated by Copeman's plan," the uterus was, "in some rough and violent way, accidentally elevated or replaced," and he attributes the recovery far more to this than to the dilatation.

In the course of his paper, Dr. Campbell justly criticises the incorrect representation and description given by Simpson, and Hart and Barbour, of the genu-pectoral position, for with them the chest is not brought in contact with the plane upon which the knees are resting, and it is really a knee-face, and not a knee-chest position. So, too, the weight of the argument is probably on Dr. Campbell's side when he objects to a frozen section representing accurately that which is found in the living subject. But he fails entirely to answer the assertion made by Hart in his *Female Pelvic Anatomy* that bimanual examination made when the subject is in the genu-pectoral position proves "the retroverted unfixed uterus has not become anteverted, but is more retroverted." Until this assertion is disproved, we must be allowed not to entertain quite the same measure of faith in the genu-pectoral position which Dr. Campbell holds.

But we pass to another explanation of the vomiting of pregnancy: It is that of PROFESSOR TALMA, of Utrecht, and is given in the February number of the *Révue Médico-Chirurgicale des Maladies des Femmes*. According to it, the cause of the vomiting is cerebral anæmia, and the remedy is nitroglycerine; the medicine being given in alcoholic solution, or olive oil in capsules. One milligramme is administered daily, but in three doses.

The same journal also contains a reference to cases recently treated successfully by Copeman's method. Hardly any one will hold that many of these were cases in which the uterus was replaced, and the replacement, not the dilatation, cured, any more than he will believe that in the other cases just referred to nitroglycerine either replaced the uterus, or dilated the cervix. We find also recorded in the *Révue*, a case of violent vomiting in an unmarried woman thirty-two years old, the cause of the disorder being thought to be a round ulcer of the stomach; the patient was successfully treated by the use of the œsophageal tube for the introduction of liquid nourishment into the stomach for three weeks, when she could again take food naturally without vomiting, and the unmistakable signs of pregnancy were present. At the beginning of the treatment she was greatly enfeebled, vomiting all aliment, her gums swollen and bleeding—indeed, she was almost in a state of collapse. A small quantity of milk was introduced by the tube once a day, and after the milk some cold water; in a few days the interval was shortened, and other food in addition to the milk, such as animal broths and oatmeal gruel, was given. Finally, we also find in the *Révue* a case of vomiting in pregnancy cured by ether spray to the epigastrium. Certainly this method of treatment is both simple and safe, and will, in some cases, be successful. It proves also useful in other forms of gastric irritability than in that occurring in pregnancy.

THE FEAR OF HYDROPHOBIA.

One of the saddest cases of death from the fear of hydrophobia which has come to our notice for some time has recently taken place in the city of Baltimore. It appears from the accounts thus far published, that a Dr. Warner, who graduated from the Washington University ten years ago, and who was engaged in the practice of dentistry, was slightly bitten, last Christmas day, on the right hand by a small dog which he had picked up on the street, and which had been injured by being run over by a wagon. The Doctor went at once to a drug-store, and had the abrasions thoroughly cauterized with nitrate of silver, and the dog, which had exhibited no signs of rabies, was then shot. Afterward, Dr. Warner frequently referred to the bite, and evidently had the fear of hydrophobia in his mind, reading all the literature on the subject he could lay his hands on, and especially the news in regard to Pasteur's so-called prophylactic method. On the ninety-ninth day after the bite, he grew restless, had "a convulsion," and insisted upon it that he had hydrophobia. This conviction must have been strengthened by the measures adopted in the treatment of the case, if not by the open admissions of the physicians in attendance, two of whom were brothers of the patient. During three days and a half the latter manifested symptoms of exalted nervous sensibility, with illusions, delusions, and slight mania. The idea and fear of hydrophobia were never absent from his mind, although at times he protested against the suspicion of it. His treatment consisted of the customary, utterly useless remedies, and of subjection to high temperature in a Turkish-bath establishment—a practice which has recently been revived, although it was long ago employed, and abandoned because it proved valueless. After a series of painfully dramatic episodes, the patient died of exhaustion.

It is said to be the general opinion of the medical men in the city where this sad event occurred that the case was one of genuine hydrophobia. But there is strong ground for the belief that the case was one of death from nervous fear, and we do not hesitate to say that to us it appears unquestionably to have been one of spurious hydrophobia.

It is unfortunately too frequent an occurrence of late that men who have had their attention attracted to the subject of hydrophobia have come to believe that they were likely to have hydrophobia. The victims have been numerous in Europe, and if, so far, they have been few in this country, it is not because the newspapers have neglected the opportunity to increase the natural and usual dread of this disorder. The only way in which the dangerous tendency of the popular notions can be checked, is by the inculcation of right ideas in regard to hydrophobia on the part of members of the medical profession. It may be set down as a fact that where the medical profession is emancipated from false opinions in regard to hydrophobia there it is, and it will be, very rare. In Philadelphia, where the subject has been much discussed during the past four years, and where the whole tendency is toward caution in making the diagnosis of hydrophobia, there is an almost total absence of the fear of it, and not a case has occurred for more than three years. The cause of humanity demands consideration for those outside of the medical profession, and we would suggest that the Baltimore medical men sift the case we are commenting upon more thoroughly before they sanction an opinion in regard to it which rests upon such slight support, and which may do much harm.

A paper published two years ago by Dr. Dulles, of this city, on "The Disorders Mistaken for Hydrophobia," might well be carefully studied by those who desire to have an idea of the many sources of error in regard to the diagnosis of hydrophobia, and to formulate opinions on the subject which will bear more than a superficial examination. When we consider the numerous conditions which this writer shows to be accompanied by the symptoms of hydrophobia, we cannot escape the conviction that such cases as this one from Baltimore, and the one which recently occurred in Newark, were of a sort which it is not hard to exclude from the category of those which deserve to be seriously considered as due to a specific infection. How many of the cases which have occurred at Paris—the very focus of the recent excitement—and at Pasteur's laboratory itself, are to be regarded as due to fear and imagination, it might be presumptuous to try to guess. But of the cases occurring here among our own people, it seems a plain duty to express our opinion.

THE MEETING OF THE ASSOCIATION.

The American Medical Association, at its meeting week after next, will have under consideration questions of vital consequence to its future career, and of the gravest import to the profession at large. Up to a very recent date the Association was pursuing a most useful and influential career, and commanded the cordial and harmonious support of the entire profession; when, however, it gave its assent to legislation which has created dissension in the profession it inflicted a most serious blow to its own welfare. By that legislation neither honor nor prestige has been gained, and the loyalty to the Association of a large proportion of the profession has been subjected to a perilous strain. The leadership at New Orleans which has swept the Association out of the placid waters in which it safely floated for nearly forty years, into the stormy sea of discord, has proven to be unsafe. Calming oil must now be

poured upon the waters if the perilous breakers which surround the Association are to be subdued, and wise and conservative counsels must direct the helm if the good ship is to outride the storm. With a large measure of faith, we hope that conservative influences may prevail at St. Louis for a restoration of that harmony which is essential to the maintenance of the power and influence of the Association.

REVIEWS.

A SYSTEM OF OBSTETRIC MEDICINE AND SURGERY, THEORETICAL AND CLINICAL, FOR THE STUDENT AND PRACTITIONER. By ROBERT BARNES, M.D., Obstetric Physician to St. George's Hospital, etc., and FANCOURT BARNES, M.D., Physician to the Royal Maternity Charity, etc. 8vo. pp. 884. Philadelphia: Lea Brothers & Co., 1885.

THIS large octavo volume of 884 pages cannot be regarded in the light of a text-book, as it covers a ground in many respects quite different from that usual in obstetrical works designed for the instruction of medical students. It covers, in fact, so wide a range of subjects appertaining to the practice of obstetrics and the treatment of the maladies of women, that it may be said to present a few remarks upon a little of everything, in which respect it resembles in character a manual or ready remembrancer. Nearly one-half of the volume is taken up before the subject of labor is reached, and in this we find treated the ovum, female generative organs, impregnation and conception, development of embryo and fœtus, placenta, physiology of the fœtus, anatomy of the generative organs, processes of gestation, childbed, lactation, signs and diagnosis of gestation, pathological states which simulate gestation, the duration of gestation; the care of the gravida, abnormal gestation, displacements of the gravid uterus, diseases of gestation (79 pages), abortion, diseases of the embryo (22 pages), and diseases of the placenta (24 pages).

In the chapters upon diseases of gestation, of the embryo, and of the placenta, covering together 125 pages, we have references to, simply by name, or short accounts of, maladies, which, if elaborated, would fill a large volume. These are valuable, as enumerators or indicators of the many ills to which the woman, the fœtus, and the placenta are liable, and we here find references to valuable monographs which may be referred to, if we desire to study any one subject at greater length.

Speaking of the color line in pregnant women, marking the location of the linea alba, Dr. Barnes remarks, that "in negresses it is as black as ink." This is certainly not the experience in our country. It is possible that in a woman exceptionally black, the line might be unusually dark, but brown is the color usual in the African race.

In the treatment of tubal gestation, nothing is said concerning the numerous successful fœticides which have been produced, particularly in this country, by the faradic current. The author appears to think aspiration to be the simplest method by which to destroy the embryo; when it is well known that the instrument of Dieulafoy is by no means a safe one to use either in the pelvis or abdomen. Duchenne's plan of shock by a Leyden jar is recommended as a fœticide, when the simple method of Dr. J. G. Allen has been so often tested, and with such satisfactory results, both as to safety and efficiency.

Missed labor is defined to be "the hypothetical retention of a mature fœtus in the uterus beyond the natural term of gestation, signs of labor at the proper time having been manifested." The remark is then made that "all the presumed cases are resolved into concealed abortion or ectopic gestations." Now Dr. Barnes ought to know that there are several cases upon record in the United States in which the fœtus was retained in the uterus, and was removed therefrom by the Cæsarean operation; and he could, also, find cases beyond question in the records of Great Britain.

In the treatment of cases of rupture of the uterus, Dr. Barnes recommends delivery by laparotomy, and then the removal of the uterus, as initiated by Dr. Prevôt, of Moscow, which procedure he erroneously calls the Porro operation. He gives as an excuse for the removal of the uterus, the danger of a second rupture in the event of a subsequent pregnancy. He does not deny the fact, that of six women operated upon up to the time he wrote, not one had escaped death. We have now a record of eight cases, with one woman saved. These women had no pelvic obstruction to justify the method, and five of them were multipara. We cannot find any excuse for the plan of Prevôt, especially since so many more subjects in proportion have been saved where the uterus was not removed. As laparotomy after uterine laceration has saved a greater proportion of cases in the United States and in some parts of Europe than the Cæsarean section, we see no reason to follow the teachings of Dr. Barnes; we have much more faith in cleansing the abdominal cavity and suturing the uterus.

Of course, Dr. Barnes prefers his own treatment of placenta prævia, and says but little of that of Dr. Hicks; but since the trial of the latter in Berlin, in 178 cases, with a mortality of 8 women, or 4½ per cent., we feel inclined to recommend bimanual turning, and bringing down one leg as soon as one or two fingers can be passed through the cervix, in preference to any other expedient.

The most decided opponent in England to the Cæsarean operation, and the strongest advocate of craniotomy down to a conjugate of 1½ inches is Dr. Robert Barnes. He cannot even see the impropriety of repeating the latter form of delivery upon the same subject as often as the woman may see proper to become pregnant; anything but gastro-hysterotomy appears to be his motto. After the results of the Cæsarean operation of latter years in England, when done promptly, we cannot condemn Dr. Barnes for his fear of it at home, but his book is not written for his own land alone. He is not, therefore, to ignore the fact, that a new method of operation, devised by Sänger, has saved in Germany 9 out of 11 women during the last six years. Laparo-elytrotomy is mentioned, but in no way commended. Now what has this expedient accomplished in the cities of New York and Brooklyn? From 1838 to the present time there have been 10 Cæsarean operations in the two, with 9 deaths; and since March, 1870, a period of sixteen years, 9

laparo-elytrotomies, with only 3 deaths. In his remarks upon the revival of symphysiotomy, under Morisani, of Naples, he says: "the mother will probably remain lame." This is directly in opposition to a statement made by Professor Morisani to the reviewer, in a letter, in 1882. Point 4 was to the effect, that "the immovable dressing secured the firm union of the symphysis pubis in all the cases that recovered." And point 8: "there were no pelvic lesions left, as a sequel of the operation." Dr. Barnes has no faith in statistics, but there is a way to obtain and weigh them which makes them of incalculable value, and they will often tell very unwelcome tales to one who may have set his mind to believe the contrary. The questions, Why did this patient recover? and Why did that one die? are to be carefully and impartially investigated, if we are to give statistics any value as a guide for the future, and as a means of teaching how to obtain better results.

The work under review has much in it of value, but it is inferior to Dr. Robert Barnes's former treatises upon *Obstetric Operations*, and the *Diseases of Women*.

SOCIETY PROCEEDINGS.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

Stated Meeting, April 7, 1886.

The President, S. Weir Mitchell, M.D., in the Chair.

Dr. J. H. Musser read

NOTES OF A CASE OF RAYNAUD'S DISEASE.

After reviewing the salient features of this disease, and pointing out the affections allied to it, the writer stated that while his case was not, strictly speaking, a case of Raynaud's disease, if the term be confined to symmetrical gangrene, yet with Barlow, who considers the paroxysmal character of the circulatory disturbances to be the essential clinical manifestation of Raynaud's disease, he could not well give it any other name. Certainly vasomotor disturbance was prominent and, if not actually causal, was an important aid to the development of gangrene. In detailing the case, the writer called attention to some vasomotor phenomena prominent in the previous medical history of the patient. They were extreme blushing, a causeless vertigo, and peculiar vasomotor phenomena attending the action of cold or due to tobacco, to both of which he was susceptible. The patient had had malaria, and an attack of chilblains years previously; never syphilis. His mother was insane, his sister hysterical; rheumatism prevailed in the family.

The young man began to serve milk on the 17th of May. Four days afterward a lump of ice fell on the palm of the left hand, and five days after the receipt of this injury his hand suddenly became cold, numb, and the seat of pain. At the same time he experienced slight tingling and numbness in the right hand. The left-hand pain was lancinating. Five weeks after the accident he was awakened in the night by severe pain, and on examination found his hand cyanosed.

When first seen by Dr. Musser the hand was blue. The end of the index finger was intensely cyanotic and on its palmar surface a small sphacelus was seen. A similar slough was seated on the little finger. The hand was very cold and the seat of intense pain, which was worse at night, increased by solar heat and by cold applications. The finger-tips were tender on pressure. No atrophy, no œdema, no loss of power or of tactile sensibility, no change in sensation and in electrical reactions. The nails grew, but were painful. General health good; eye ground and pupils normal. Urine normal. At this time the local asphyxia alternated with local syncope, four or five times in a day; the syncopal attacks lasted five to fifteen minutes; the pulse was absent in the brachial and radial arteries. Later, the change from asphyxia to syncope occurred hourly. He remained under treatment until September 15th. During this time the fingers, except the ring, were cyanosed. Finally the cyanosis led to dry gangrene of the index finger, and by the 1st of September the first and second phalanges were removed. A slough formed on the middle and little fingers. The nails grew but slightly, and after a time it was found the portion growing was on a lower plane than the first part and was cracked and friable. The cyanosis gradually gave way to an irregular mottling. The hand has been extremely sensitive to cold, yet the patient has followed his usual occupation since October 1st.

Dr. Musser believes a thrombus was present in the radial and brachial arteries. The capillary vessels, as observed on microscopical section of a piece of tissue, were not inflamed but contained blood-clot. The thrombus does not explain the vasomotor phenomena, however, and the reporter thought it due to reflex action. The source of reflex action being in the vessel or its walls, its irritation would be carried by the "pressor" fibres to the central ganglia. The absence of paralyses, atrophies, or electrical changes, left neuritis out of the question.

The treatment was by electricity, which always relieved pain, and by nitroglycerine.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, April 15, 1886.

The President, A. Jacobi, M.D., in the Chair.

MEMORIAL NOTES

of deceased Fellows and officers were read as follows: of Alfred C. Post, M.D., by Dr. Stephen Smith; of S. Oakley Van der Poel, M.D., by Dr. A. Van der Veer, of Albany; of Austin Flint, M.D., by the President.

Dr. T. Herring Burchard read a paper on

PELVIC ABSCESS IN THE MALE.

This subject, he said, has not attracted the same surgical attention as have those occurring in the female; but the serious nature of the affection is quite as great in the one as in the other, and its occurrence he believed to be more frequent than the meagre literature of the subject would lead us to suppose.

Five cases have fallen under Dr. Burchard's immediate observation. By pelvic abscess, he wished to be understood as meaning a phlegmonous inflammation occurring in the superior portion of the pelvic cavity, below the cavity of the abdomen, from which it is separated by the pelvic reflexions of the peritoneum, and above the vascular floor formed by the levator ani

muscle. It must not be confounded with abscesses of the abdomen—typhlitic, perityphlitic, etc.—nor with those originating below the levator ani, in the ischio-rectal fossa. In the loose connective tissue which occupies this region, described by Richet as the pelvi-rectal space, abscesses occasionally form.

From the peculiar anatomical construction of this space, with its bony lateral boundaries and its dense and almost impervious musculo-membranous floor, abscesses may originate here, producing most acute constitutional disturbance, and yet be unaccompanied with any distinguishing symptoms that would call the surgeon's special attention to their existence. Not only this, but, following the general law of abscesses, to travel in the direction of least resistance, they will burrow internally to very distant parts without manifesting their presence by coming to the surface.

Thus, they will dissect their way through the foramina of the pelvis, and appear externally under the gluteal muscles: they have penetrated the acetabulum and destroyed the hip-joint; they have dissected up the aponeurosis of the iliac muscles, produced necrosis of the ilium, and appeared upon the external surface of that bone. Or, the abscess having emerged from the pelvic cavity, may travel anteriorly, following the course of the femoral vessels beneath Poupart's ligament, and make its appearance on the anterior surface of the thigh. Or, again, it may penetrate the hollow viscera and evacuate itself into the bladder, the rectum, or the peritoneal cavity. In fact, having once escaped its bony confines, there is no direction in which it may not travel.

Mr. Henry Morris divides such iliac abscesses, of pelvic origin, into two groups, (1) the subperitoneal, and (2) the subaponeurotic; the former being prone to spread widely, in both an upward and a downward direction, and the latter more circumscribed, forming between the fascia iliaca and iliac muscle, and producing caries or necrosis of the bone.

The clinical history and symptoms naturally vary according to the acuteness or latency of the attack. Should the attack be acute, both the constitutional and the local disturbance are proportionately greater. In such cases the phlegmon forms rapidly, with great pain and corresponding febrile phenomena; and such an attack might readily be mistaken for one of general or circumscribed peritonitis. With the pain we have more or less abdominal distention, tympanites, vomiting, and flexion of the thighs; all of which are characteristic of that disease. Micturition is difficult, or altogether impossible. The tumefaction may project into the rectum, setting up proctitis and tenesmus. Should the inflammation spread upward, localized or general peritonitis may result. Abscesses that form thus acutely are more likely to evacuate themselves spontaneously in either the rectum or the bladder than are those of a subacute or chronic character.

Having quoted the history of a case illustrative of the truth of this statement, published by Dr. Bowditch in the First Medical and Surgical Report of the Boston City Hospital, 1870, Dr. Burchard went on to remark that just how speedily the inflammation may terminate in suppuration in these acute cases, it would be difficult to say. The inference is logical, he thought, that suppuration, when it occurs, does so some considerable time before it makes itself manifest by external tumefaction. It seems that the delay in getting the evidences of abscesses is not due to the absence of pus, but rather to the difficulty the pus experiences, on account of the depth of the suppurative process, in coming to the surface.

During all this time, however, the constitutional evidences of internal suppuration are more or less pronounced, and a carefully conducted examination at this stage may forestall and prevent many months of tedious suppuration, with its attendant evils. Still, chronicity, rather than acuteness, seems to be the rule with pelvic phlegmons in the male, except in cases having a traumatic origin. The affection most frequently occurs in the poorly nourished and cachectic, and in such subjects inflammatory processes are slow, and suppuration tardy. A widely diffused induration may pervade the pelvic cellular tissue months before its final breaking down into pus. The diagnosis in such cases is often very baffling, owing partly to the inaccessibility of the parts affected, and partly to the complexity of symptoms that arise from so many different tissues, organs, blood-vessels, and nerves being implicated in the inflammation.

As bearing upon the clinical history, Dr. Burchard related five cases which had come under his personal observation. Of these, the last was of greatest interest, and was as follows:

Peter Murphy, aged twenty-three, married, a porter by occupation. Always temperate, and robust and strong up to March, 1882, at which time he was suddenly seized, after some unusual exertion, with sharp pains in the right iliac fossa, which lasted thirty hours. This paroxysm terminated in a dull, heavy pain, which extended across the hypogastrium into the left iliac region, and which continued with greater or less severity up to the time of his operation.

In June, 1884, he was admitted to St. Luke's Hospital, suffering from the same intense pains. Poultices were applied, but no suppuration occurred. The diagnosis of typhoid fever was then made.

In the following August, after several unsuccessful aspirations, an abscess of the right lumbar region, midway between the iliac crest and the ribs, was evacuated by the late Professor James L. Little. The case was regarded by him as one of perityphlitic abscess.

At this time the patient's condition was very bad, with some steady pain deep in the pelvis and perineum, and darting pains extending through the rectum into the right testicle and down the sciatics. There was also priapism, with involuntary nocturnal emissions.

In December a second abscess formed, and was opened by Dr. Little. Although suffering more or less constant pain, his health improved during the winter; but, in March and July following, other abscesses formed in the side and over the body of the ilium. These were also opened. In August and September he had the pain and constitutional disturbance of forming abscesses, but free incisions failed in giving vent to pus.

October 5. Patient's health evidently failing. All the old pains have returned. A careful examination under ether was made by Dr. Burchard, Drs. Seneca, D. Powell, and Henry A. Mandeville assisting; but, owing to the thickness of the abdominal walls from fat, this was very unsatisfactory. Rectal examination revealed nothing.

A localized phlegmon over the ilium, two inches below and to the front of the posterior superior spinous process, was opened, and carious bone detected. This was removed by gouge and rongeur. The superficial caries led into a large abscess cavity in the ilium, and this in turn communicated by a direct opening with the iliac fossa. The finger, introduced through the bone, could detect nothing abnormal within the abdomen. The carious bone being thoroughly removed, a tent of bichlorized oakum was introduced through the ilium, and the wound partially closed.

29th. After great pain, referred to the hypogastrium, right iliac region, and right testicle, another abscess formed, and discharged through the opening in the bone. The source of this could not be detected, and both external and rectal examinations failed to throw light on the case.

In the early part of December another abscess formed within the pelvis; but, instead of discharging through the opening in the ilium, pointed over the crest, and was evacuated at this point.

The patient's condition was now critical in the extreme. He was rapidly losing strength and flesh, and was being worn out with constant pain and suppuration; while albumen, with hyaline casts, appeared in his urine. It was felt that something effective ought to be done, and yet there was nothing tangible upon which to found a diagnosis, beyond the fact that at irregular intervals abscesses in the right iliac region would form and discharge. Repeated examinations were negative in their results.

Laparotomy was accordingly performed February 1, 1886, at St. Elizabeth's Hospital, by Dr. Burchard, Drs. H. Marion Sims, Mandeville, and C. W. Stimson assisting. An incision was made, commencing just above and posterior to the posterior superior spinous process, and following the bone downward for a distance of five inches. The dissection was carried through the abdominal muscles, and the peritoneum exposed. This he endeavored to detach from the subjacent fascia, but so firmly adherent was it that, in spite of very gentle manipulation, it tore. A flat sponge was introduced through the laceration, to hold back the intestines, while with the hand a thorough exploration was made. Almost immediately a mass of adhesions was found, that led to an old abscess cavity which occupied the posterior half of the fossa, and extended, like a great sinus, directly from the ilium, on the line of the pelvis, and down into its cavity. No dead bone could be detected.

The sinus having been laid open, its walls, which were almost cartilaginous, were thoroughly revivified with a dull curette. The sinus through the bone was likewise curetted, and some carious bone removed. Two drainage tubes of soft rubber, eight inches long, were carried directly to the bottom of the sinus, and the whole thoroughly irrigated with a solution of bichloride of mercury, 1 : 2000. The abdominal wound was now closed with deep and superficial sutures. The incision leading through the bone was kept open, and dressed from the bottom with iodoform and bichlorized oakum. A superficial dressing of borated cotton was made over all.

The patient rallied well. On the third day the temperature rose to 102⅕° F., and the pulse to 120, and there was a very slight circumscribed peritonitis. On the sixth day the patient's temperature was practically normal, and the discharge from the tubes scarcely amounted to half a drachm. After this the tubes were shortened gradually, and at the end of three weeks were entirely removed, firm granulations having filled up the cavity of the sinus. The opening through the bone has likewise been filled in with new tissue, and is now closed.

Having presented the patient, who, he said, was in better health than he had enjoyed for years, Dr. Burchard then spoke of the diagnosis and treatment of pelvic abscess in the male. Wherever cellular tissue exists in the body, then suppurative inflammation is liable to occur. The male pelvic cavity, as the grossest dissection will show, contains a large amount of cellular tissue, and, pathologically, it is no exception to the rule.

Inflammation occurring here manifests itself, in addition to local distress or pain, which is generally severe in character, by the usual constitutional disturbances. After tumefaction has occurred, another set of symptoms arise, which are due to pressure on sensitive nerves and organs. Another feature peculiar to these abscesses is their tendency to burrow, and the very great dangers attendant thereupon. Their natural destination should be the perineum, and such doubtless would be the case, were it not that the extremely dense fibres of the levator ani and prostatic muscles, which are largely composed of firm fibrous tissue, present an almost impenetrable obstacle.

The next most natural route would seem to be the rectum, and here many of these abscesses are evacuated. Many, however, mount the pelvic cavity, and appear within the abdomen.

After this their course is erratic. Most of the abscesses appearing anterior to the bladder in the so-called "cavum Retzii" (named after the distinguished Swedish anatomist, Retzius), the prævesicular abscesses of French surgeons, are abscesses of pelvic origin.

Clinically, it is important to distinguish between an inflammatory condition pure and simple—a cellulitis simplex—and the same condition after it has passed into the suppurative stage.

The presence of pus cannot be recognized at too early a period. It is likewise necessary to distinguish between a pelvic cellulitis and general or localized peritonitis; also between this and cystitis, proctitis, and prostatitis. Rheumatism and neuralgia, too, must be borne in mind.

Surgically, it is necessary to differentiate between abdominal abscesses, ileo-pelvic abscesses, pelvic abscesses, abscesses of the ischio-rectal fossa, and perineal abscesses. Exceptional possibilities must be carefully considered; such as hernia strangulated in the pelvic foramina, passage or impaction of renal calculi, acute inflammation of the psoas muscle, typhlitis and perityphlitis, and lastly, scrofulous, malignant, tubercular, and syphilitic disease of the pelvic glands.

The treatment, externally, resolves itself into treatment of the cellulitis before suppuration, and treatment after suppuration is established. In the former case, rest, morphia, quinine in few doses, local refrigeration, and possibly, local depletion by leeches to the perineum.

In employing cold in this, or any other inflammatory condition about the rectum, nothing equals in efficacy and comfort, in Dr. Burchard's experience, the continuous douche of cold water, which passes up and imme-

diately returns through a double-flow blind tube. The great mistake that is often made by the inexperienced in the application of either this or the ice-coil is in applying it too cold at first. The water at first should be warm, and then gradually cooled until ice water can be used, and with astonishing relief. During acute inflammation frequent rectal explorations should be desisted from, as calculated to do more harm than good. After suppuration may reasonably be suspected, a careful examination under anæsthesia should be made, in order that the abscess may be evacuated into the rectum at the earliest possible moment. If evidence of internal suppuration persist, and there is reason to believe the pus to be burrowing upward, an abdominal exploratory incision is obviously demanded.

If this can be made without opening the cavity of the peritoneum, it certainly should be done. The object to be attained, however, is the evacuation of the pus; but we cannot always be successful in this, as adhesions will form impassable barriers at times. The principle, however, is surgical and conservative.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, April 6, 1886.

THE PRESIDENT, C. L. DANA, M.D., IN THE CHAIR.

The following named gentlemen were elected

OFFICERS FOR THE ENSUING YEAR:

President.—C. L. Dana, M.D.

Vice-Presidents.—M. A. Starr, M.D., and B. Sachs, M.D.

Recording Secretary.—G. W. Jacoby, M.D.

Corresponding Secretary.—W. M. Leszynsky, M.D.

Treasurer.—E. C. Harwood, M.D.

Councillors.—L. Weber, M.D., E. C. Seguin, M.D., W. R. Birdsall, M.D., G. M. Hammond, M.D., and A. D. Rockwell, M. D.

A NEW THERMOCAUTERY.

DR. GRAEME M. HAMMOND presented the instrument, consisting of a Bunsen burner which, by the action of a spring and clamp throwing a platinum tip at right angles to the burner, could at once be converted into a thermocautery. It has the advantage over the ordinary Paquelin cautery of being always ready for use.

CASE OF MEDIAN NERVE SUTURING.

DR. FRASER C. FULLER presented a man who two and a half years ago sustained a glass cut wound of the lower forearm, resulting in complete division of the median nerve and a part of the sublimus flexor. The nerve was sutured with three small strands of catgut a few hours after the injury. The tendons were also united. The operation and dressing were absolutely antiseptic, and primary union took place. At the time of the operation there was complete cutaneous anæsthesia of the region supplied by the nerve. After several months sensation slowly returned, and a year and a half after the operation it was perfect. Power in the small muscles of the affected hand had not entirely returned. Dr. Fuller referred to another case in which spontaneous recovery took place, operation being refused. There occurred, however, deep necrosis of the finger-tips, and to constant care and energetic electrical treatment only could the eventual recovery be attributed.

DR. DANA thought the case illustrated very well the result of the experiments of Johnson and Stockholm, that divided nerves, if sutured, healed in about sixty days, but if let alone they healed in about ninety days.

DR. B. SACHS then read a paper entitled

PRELIMINARY REPORT ON A CASE (WITH AUTOPSY) OF TUBERCULAR DISEASE OF THE SPINAL CORD.

After a few introductory remarks the reader gave a full report of the case, of which the following is a short abstract: The trouble, which was supposed by the patient to be rheumatic, began with pains in the left shoulder which radiated down into the arm, forearm, and hand. By degrees the pain became more intense; at first it was confined chiefly to the area of distribution of the ulnar nerve, but had gradually spread over the entire dorsal and volar surface of the left arm and hand. In addition to this hyperæsthesia (and hyperalgesia), to puffiness of the fingers and to a glossy appearance of the skin, there was marked weakness of grasp in his left hand, with only slight loss of power in the left upper arm and forearm. The condition of the left upper extremity remained unchanged during the entire course of the disease—a period of about two months. At the time of the first examination—five weeks after initial pains—there were no other symptoms discoverable but these: a slight paresis and some hyperæsthesia of the left leg, exaggerated knee-jerks and ankle clonus on both sides. These symptoms, chiefly unilateral, continued so until the close of the seventh week; meanwhile the paresis of the left leg had developed into almost complete paralysis; in the course of another week this unilateral paralysis was transformed into a complete paraplegia of the lower extremities. The motor paralysis also affected the abdominal muscles, and to some extent the respiratory muscles of the thorax, and the right upper extremity. Incontinence of urine and trophic changes in the skin were superadded. The sensory symptoms amounted to a general hyperæsthesia of the left half of the body below the level of the third rib; this hyperæsthesia was changed toward the end of the disease into an anæsthesia which spread from the left half, and finally involved the right leg and to a less degree the right half of the trunk and the right upper extremity. A tumor pressing upon the left posterior root fibres of one of the lowest cervical segments was thought sufficient to explain the unilateral symptoms; the bilateral symptoms were attributed to a cervico-dorsal myelitis. But there was no clew during life to the nature of the tumor. The autopsy showed a solitary tubercle situated on the left side between the sixth and seventh cervical segments, followed by a cervico-dorsal myelitis; there were *very slight* tubercular deposits in the lungs and intestines.

In his remarks on the case, the author of the paper attempted to explain the eccentric characters of the sensory symptoms (no anæsthesia on the side opposite the lesion), the exaggerated knee-jerks and presence of ankle clonus on both sides, and then referred in detail to the behavior of the muscular sense, which was lost on the side of the lesion and not on the side opposite the lesion. This was in accord with Brown-Séquard's views

and opposed to those of Ferrier. In conclusion, the reader asked for discussion of the following points: 1. Differential diagnosis between tumor and other forms of spinal cord disease; 2. Frequency of tubercular affection of the spinal cord substance; 3. Unilateral symptoms from spinal cord disease, with special reference to disturbances of sensibility and of the muscular sense in particular.

DR. M. A. STARR had, by invitation of Dr. Sachs, made an independent examination of the patient three weeks ago. That which caused them to hesitate in making a diagnosis was the difficulty of harmonizing the sensory disturbances with the assumption of an absolutely unilateral lesion in the cord. It had been said that Brown-Séquard had shown pretty conclusively that anæsthesia on one side and hyperæsthesia on the other, are due to a unilateral lesion on the same side, the side on which there was hyperæsthesia. The autopsy in this case showed pretty evidently that it did not fall in line with those of Brown-Séquard; that in the early stage, at least, of unilateral cord disease anæsthesia of the opposite side of the body did not always exist. But it was impossible to draw any definite conclusions from a single case, and he had been unwilling to admit this one as being outside the usual line, because he had previously seen one at the Polyclinic, since reported by Dr. Taylor as confirming in all respects the theory of Brown-Séquard. It was true no autopsy was obtained, but the symptoms seemed to be very definite. Dr. Starr thought the whole subject of sensory conduction in the spinal cord is in an unsatisfactory state. There seemed to be no doubt that the muscular sense tract lies in the column of Goll and crosses in the medulla, not in the cord. That view was confirmed by Dr. Sach's case. The areas of analgesia and hyperalgesia in the later stages of this case were rather irregularly distributed, thus rendering the study of the sensory tracts in the cord extremely difficult. He had been impressed with the great hyperalgesia in the arms of this patient, the slightest touch, even of the nails, causing great gain. If the sensory tracts crossed just after entering the cord, why was there not anæsthesia on the right side in this case? Three or four cases had been recorded in which there was some reason to believe that the sensations were conveyed upward through lateral tracts in the cord, anterior to and a little outside of the pyramidal tract. Three or four cases had been reported in which there was ascending degeneration in this tract, and he had himself seen one which was not yet reported. If sensations were carried upward in that portion of the cord, it would possibly explain some of the peculiarities in Dr. Sachs's case, in which that portion chiefly escaped.

DR. L. PUTZEL said that if Dr. Sachs referred to miliary tuberculosis of the cord, he could say from his own experience that it is not of very infrequent occurrence.

DR. SACHS said that he referred to tuberculosis of the spinal cord substance, and not of the spinal meninges.

DR. PUTZEL had seen only one case of that kind, in which the disease gave rise to a myelitis with all the characteristic symptoms. Tuberculosis of the cord had not been suspected. The case occurred in a phthisical woman. It seemed to him that the lesion in Dr. Sachs's case was so diffuse that very little could be learned from it regarding localization and transmission of sensory impressions. Concerning Dr. Starr's views as to the muscular sense being conducted by the columns of Goll, he had seen some years ago a case of meningomyelitis in which there was considerable thickening of the membranes posteriorly, and such degeneration of the columns of Goll that it could be seen distinctly through the pia mater, yet there was not the slightest evidence of affection of the muscular sense.

DR. LEO had seen in institutions a number of cases of tuberculosis in patients suffering from locomotor ataxia, especially in old men.

DR. E. G. SPITZKA reviewed some of the points in the case, and said he thought the fact that tumors in other portions of the cord had not been excluded, deprived the case of much determining value. As to the views entertained by Brown-Séquard and referred to in the discussion, he had been somewhat surprised at some of the revelations made during the course of the discussion. He had not considered tuberculosis either of the membranes or of the substance of the cord so common an occurrence in old age, that any single observer could have seen a large number of cases, and certainly the suggestion made by Dr. Leo was worthy of following up. Regarding the muscular sense tract, he thought that if a single case was to be accepted as disproving the supposed function of a given part of the cord, there was no part which could not be regarded as without function. He remembered that specimens had been presented before this Society, in which it was claimed that the columns of Goll had undergone slight degeneration, when it was found that there was only a slight thickening of the septum from old age.

DR. PUTZEL remarked that the case which he referred to was also examined by Dr. Welch.

DR. GRAEME M. HAMMOND said that the question which interested him specially, was whether exaggerated knee-jerks and ankle clonus necessarily indicated an organic lesion. He had under treatment a gentleman in whom there was exaggerated tendon reflex, and very marked ankle clonus in both the upper and lower extremities on the left side. There was no stiffness, pain, atrophy, or other symptoms of spinal disease. After a few doses of ergot the ankle clonus and exaggerated tendon reflex disappeared, to return again after quitting the ergot, and disappearing with its renewal. Two or three years ago he exhibited before the American Neurological Association a man cured of locomotor ataxia, and in whom there was entire absence of tendon reflex; yet under the influence of ergot the tendon reflex returned. We could hardly conclude that ergot cured true sclerosis or any organic disease. The question arose, Were exaggerated reflexes and ankle clonus to be regarded as the effect of organic disease of the cord.

DR. M. PUTNAM JACOBI inquired as to the relation between increased patellar tendon reflex and functional disease, and referred to a marked case of hysteria, in which during a protracted attack she noticed very marked exaggeration of the patellar tendon reflex.

DR. SPITZKA said that only a few days ago a child which had poliomyelitis, the right lower extremity only being affected, received for several days in succession double the dose of strychnine which he had intended to administer, which had the effect of producing marked exaggerated knee-jerks and ankle clonus, which had

previously been entirely absent. He could never understand why ergot should produce the opposite effect, although he did not doubt that it had done so in Dr. Hammond's case.

DR. SACHS, in taking up the various points raised in the discussion, insisted on the importance of differentiating in his case between the symptoms due to the tumor and those due to the subsequent myelitis; the unilateral symptoms alone could be put to the account of the tumor. Addressing himself to Dr. Spitzka, Dr. Sachs said that he did not think it necessary to suppose several lesions in the cord in order to explain the symptoms at the beginning of the case; the symptoms which developed later in the disease were attributed to the myelitis. Of the initial symptoms, the only one opposed to Brown-Séquard's views was the absence of anæsthesia on the side of the body opposite the lesion, and the speaker explained that on the supposition that the fibres in the sensory tract were only pushed aside, and not destroyed by the tumor, retaining their conducting power. Explained in this way, the case could be made to accord with Brown-Séquard's views.

As to the exaggerated knee-jerks and double ankle clonus, it was admitted by almost all that exaggerated knee-jerk might be present in comparatively normal conditions. The existence of ankle clonus without some change in the lateral columns is questioned by many, but it was shown by Prof. Pitres to exist as early as eight hours after an apoplectic attack, and that, therefore, in his (Dr. Sachs's) case it would not be necessary on account of these symptoms alone to assume multiple lesions.

DR. SACHS agreed with Dr. Spitzka concerning the infrequency of tuberculosis of the spinal cord. The best authorities claim that tuberculosis of the spinal cord substance is exceedingly rare.

DR. LEO, in reply to a question, said he did not claim that the tabes dorsalis in the cases which he had seen in old people was due to tuberculosis of the cord; the existence of the two diseases may have been a mere coincidence.

DR. G. M. HAMMOND thought that exaggerated tendon reflex or ankle clonus might be due to either a localized congestion or anæmia of the cord, and this would explain why in one case they were relieved by strychnia and in another by ergot.

NEWS ITEMS.

THE PRESENTATION OF A LOVING CUP TO THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.—On Wednesday evening, April 14th, on the occasion of the 99th anniversary of the founding of the College, more than one hundred of the Fellows sat down together at dinner, Dr. S. Weir Mitchell, the President of the College, occupying the head of the table. After the cloth was removed, Mr. Horace Howard Furness, on behalf of two ladies, descendants of two of the founders of the College, presented to the College, in a happy speech, the massive silver loving cup, a drawing of which is herewith presented.

The President, Dr. Mitchell, in accepting the cup said:

"Fellows of the College of Physicians: In this the ninety-ninth year of the life of our collegiate society I rise with pleasure to receive this gift of a loving cup. I accept it for the Fellows, and have, as you can well understand, unusual personal gratification in so doing. Mr. Horace Howard Furness, our greatest Shakespearian scholar, has been chosen to be the mouthpiece of the generous women who gave it, and his words have lent added grace to a graceful gift." After commenting upon the significance of its decorations he said:

"I am quite too proud of the place in which your votes have placed me to sit down without a word as to the institution which claims us as her own. On the 2d of January, 1887, 100 years will have passed by since a remarkable group of men collected in a little room on Fifth Street to institute this college. Of some of these men I can find no record, but in cue and knee breeches, with gold-headed canes and snuff boxes convenient, no doubt, in moments of medical indecision, were John Jones, Morgan Rush, Wistar, Hutchinson, Shippen, Adam Kuhn, Redman, Samuel Powell Griffiths, the Clarksons, and some of lesser note. No one could hesitate to speak of this as a notable group of men. They were founders of societies, hospitals, and libraries; were medical teachers, the fathers of our university, and in the front ranks of local politics. Their names are all socially familiar to this day. Many of them had served with Washington as surgeons and shared the gloom of Valley Forge and the sunshine of Princeton and Yorktown. Among them were the physicians of Washington, Franklin, and Hamilton. They made, indeed, part of that famous group—statesmen, soldiers, diplomatists, men of science, manufacturers of history—who helped to launch our young ship of State on the turbulent sea of history. They were hardy, ruddy, positive, decisive survivors of a great struggle—men born from the iron loins of war.

"Nor in other fields did they fail. In the sad yellow fevers, which they well called "malignant," from 1793 to 1800, they were brave and fearless when few were brave. On these fields they fell man after man, one-fourth dying at their posts. Not less did they well in the fierce typhus of the first years of this country, which cost the life of Rush, the surgeon, the signer of the Declaration, the foremost American physician of his day, a reforming philanthropist in advance of his time, a scholar, a fierce hater, a friend as earnest, a man of strange contradictions, whose remarkable abilities await appreciative commemoration at the hands of some thoughtful biographer.

"In the unimaginable horrors of the smallpox of 1825 and 1826, the successors of the founders took their usual dutiful part, and in the cholera of 1832 were as brave and as unflinching. I am sure that should such sad days recur, we should not shame their record. I now, in this loving cup, drink, first to the memory of our illustrious dead, then a health to our guests, and last to the Fellows—long life and prosperous days and success to the College of Physicians of Philadelphia."

Dr. H. C. Wood responded to the toast of "The College of Physicians of Philadelphia," the President of the New York Academy of Medicine, Dr. Jacobi, to "The Profession," Dr. J. S. Billings to "The Army and Navy Medical Service," and Mr. Talcott Williams to "The Press."

The cup was designed and made by Messrs. Bailey, Banks & Biddle, to the special order of the donors.

It is about nine inches both in height and diameter. The shape, which is eminently original, somewhat resembles a large pineapple. Each of the three handles represents the staff of Æsculapius, being a gnarled rustic branch about which is coiled his emblematic serpent. The handles at top and base are also decked with foliage symbolizing the growth and flourishing condition of the College. In the three spaces between these very appropriate and handsome handles are three medallions in high relief; viz., the seal of the College of Physicians, the bust of Dr. John Redman, the first President of the College, and the arms of the City of Philadelphia. A graceful ribbon wound about the edge of the cup bears the motto "Wine maketh glad the heart of man."

The cup is hand-made throughout, oxidization and other processes give it a finish suggestive of age, and its style is of the most massive and substantial character, not only in appearance, but in fact, even the handles being of solid silver. Inside, the cup is heavily gilt, in rich contrast with the exterior.

Food Analysis in France.—The Académie des Sciences has a laboratory in Paris for testing the quality of food and drink sold in that city. Specimens of wine, beer, cider, milk, chocolate, coffee, tea, etc., are examined, colors used on toys and in confectionery, pork suspected of being affected with trichinosis, etc. Analysis to determine whether the article presented is free from adulteration is made without charge; but a small fee is charged if it is required to determine the proportionate composition. There are twenty inspectors who visit taverns and groceries, provided with microscope and simple chemical tests, and examine many articles of merchandise on the spot, only taking to the laboratory such articles as afford some evidence of adulteration. Twenty-five chemists are connected with the laboratory, each one having his own department. About 25,000 samples are analyzed annually at an expense of about $40,000.

An Interview with Pasteur.—In the *New York Tribune*, of April 19, there appears a report of an interview between a correspondent and M. Pasteur, in which the latter spoke as follows regarding his failure to cure the Russians bitten by a mad wolf.

"The duration of the incubation of hydrophobia after a bite from a mad wolf is often very short; sometimes only two or three weeks. After the bite of a mad dog short periods of incubation are rare. However, I do not think the virus of a mad wolf differs much from that of a mad dog, unless the wolf has received the virus from another wolf, and that one from another, and so on. In the case of hydrophobia thus transmitted from wolf to wolf, the bite of the last wolf would have a much greater degree of virulence than that of a dog. We don't know what happens in the forests of Russia. That is a matter for future study. It may be found that the inoculation of victims of mad wolves ought to begin five or six days after the bite. If that be so, and if the forests of Russia are found to contain mad wolves, I shall be the first to ask for the creation of one or more establishments in Russia like mine in Paris."

Poisonous Candy.—Two brothers, candy dealers, on Chambers Street, New York, have each been fined $100 for selling "rock and rye" drops, which on analysis by Professor Edwin Waller, of the Health Board, were found to contain fusel oil.

State Medical Society of Arkansas. — The Eleventh Annual Session of the State Medical Society of Arkansas will be held in the Council Chamber, at Little Rock, on Wednesday and Thursday, April 28 and 29, 1886, commencing on Wednesday at 10 A. M.

Medicine in Russia.—Russia has 33,400 physicians, of whom 380 are females. There are 2100 persons licensed to practise veterinary surgery. 500 are enrolled as dentists and "oculists."

Dr. Joseph Holt, President of the Louisiana State Board of Health, has been appointed a member of the Council of the Section on Public Health and Hygiene of the next International Congress, Dr. Joseph Jones, of New Orleans, being President of the Council.

An American Dinner to M. Pasteur.—Mr. McLane, the American Minister, presided at a dinner which was given on April 14th to M. Pasteur. In proposing the health of the distinguished guest, Mr. McLane referred to him as a benefactor of humanity, to whom America was extremely grateful. M. Pasteur made an appropriate response, and closed by proposing a toast to the Union, and to the friendship existing between the United States and France. 120 French, English, and American guests were present.

Pasteur Institute.—The subscription to the *Institut Pasteur* had reached the sum of 537,123 francs.

Professorship of Anatomy in Jefferson Medical College.—The Trustees of the Jefferson Medical College, at a meeting held on April 15, failed to elect a Professor of Anatomy, and adjourned to meet on Monday, the 26th inst.

Dr. Flint's Successor.—Dr. Edward G. Janeway has been appointed Professor of the Principles and Practice of Medicine in the Bellevue Hospital Medical College, in the place of the late Dr. Flint. In recognition of Dr. Flint's long and distinguished services at Bellevue Hospital, the Commissioners of Charities and Corrections have decided, at the request of the Medical Board, to put up in that institution a mural tablet to his memory.

LIFE AT HIGH PRESSURE.—At a recent meeting of the Paris Biological Society, M. REGNARD showed two cylindrical blocks of quartz, which are to be adjusted to an apparatus for submitting animals to a pressure of 1000 atmospheres. These blocks, owing to their excessive transparency, if they do not burst, will allow the observer to study all the phenomena which occur.

FEMALE PHYSICIANS.—We understand that the Colleges of Physicians and Surgeons of Edinburgh and Glasgow have just decided to throw open to women their conjoint examinations and "triple qualification" in medicine, surgery, and midwifery.

WÖHLER MEMORIAL.—An urgent appeal is being made anew in behalf of the fund for the statue to be erected at Göttingen in commemoration of the life and work of the eminent chemist Friederich Wöhler. This fund now amounts to about $4000, but must be considerably increased before it will be sufficient for the end in view. The circular of the committee asks for aid, by individual subscription and influence, from all in this country interested, especially from the chemists. Prof. J. W. Mallet, of the University of Virginia, is Chairman, and Prof. Ira Remsen, of Baltimore, Secretary and Treasurer.

THE VANDERBILT DISPENSARY.—The heirs of the late William H. Vanderbilt have united in giving to the Trustees of the College of Physicians and Surgeons of New York the sum of $250,000, to be expended in the erection and endowment of a clinic building. The site of the Vanderbilt Clinic will be opposite to the Sloane Maternity.

CHOLERA ON THE CONTINENT.—Telegrams of April 18, state that the Sanitary Board of Rome admits that Asiatic cholera has broken out at Brindisi, and has ordered that all arrivals at other Adriatic ports from Brindisi be quarantined one week. The Austrian government has ordered one week's quarantine against arrivals at Austrian Adriatic ports from Brindisi.

FOR SICK AND DISABLED NEWSPAPER EMPLOYEES.—Mr. Joseph Pulitzer, editor of the *World*, and Representative from New York, has given his first year's salary as Congressman, $5000, to the New York Hospital, to found a free bed for the benefit of newspaper employees.

GERMAN TRANSLATION OF SAYRE'S ORTHOPÆDIC SURGERY.—A fine German translation of Professor Sayre's Lectures on Orthopædic Surgery, by Dr. F. Dumont, of Berlin, has just been received.

MR. SAVORY, President of the Royal College of Surgeons, England, it is stated, has been offered a knighthood, an honor which he has declined to accept.

NOTES AND QUERIES.

HEMORRHAGE AFTER UVULOTOMY.

DR. E. CARROL MORGAN, No. 918 E Street, N. W., Washington, D. C., is investigating the subject of obstinate hemorrhage following uvulotomy, with a view of publishing a monograph on this subject. He will be greatly indebted for the details of any *recorded* or *unrecorded* examples of this rare accident.

SOLUTION OF THEINE FOR SUBCUTANEOUS USE.

After considerable experimentation with different solutions of theine, since my last article on this subject was written, I find that a solution made according to the following formula produces very little, if any, pain when introduced subcutaneously, and is also very concentrated—five drops representing one-half of a grain of theine.

℞.—Theine . . . . . grs. xxxij.
Sodæ benzoas . . . . grs. xlviij.
Aquæ destil. . . . . fl ℥ss.—M.

For subcutaneous injection, dose, from five to twenty drops.

THOMAS J. MAYS.

April 20, 1886.

THE ANALGESIC ACTION OF THEINE.

To the Editor of THE MEDICAL NEWS,

SIR: Apropos to the very interesting paper by Thomas J. Mays, M.D., on "The Analgesic Action of Theine," in THE MEDICAL NEWS of the 17th inst., I would like to say that it is not infrequently possible to relieve cases of the character of some of those cited by hypodermatic injection of distilled water. Indeed, it is not always needful to inject *anything*—the simple puncture with a needle being quite sufficient.

It has for many years been the practice in some of the public dispensaries of New York City to treat cases of lumbago, and other myalgias, by inserting deeply a needle such as ladies use to fasten their bonnets to their hair. I have known cases of severe lumbago to be cured almost instantly by this simple procedure (adopted from Chinese practice), and I am inclined to think that some of the cases reported to Dr. Mays might have been similarly relieved.

Very truly yours,
F. A. CASTLE.

NEW YORK, April 19, 1886.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM APRIL 13 TO APRIL 19, 1886.

PATYKI, J. H., *Captain and Assistant Surgeon.*—Relieved from duty at Jackson Barracks, Louisiana, and ordered for duty as Post Surgeon at Mount Vernon Barracks, Alabama.—*S. O. 75, Department of the East*, April 12, 1886.

HOFF, JOHN VAN R, *Captain and Assistant Surgeon.*—Leave of absence extended eleven months, with permission to leave the United States.—*S. O. 85, A. G. O.*, April 12, 1886.

BARNETT, RICHARDS, *Captain and Assistant Surgeon.*—Granted leave of absence for two months.—*S. O. 16, Division of the Atlantic*, April 12, 1886.

WALES, PHILIP G., *First Lieutenant and Assistant Surgeon.*—Granted leave of absence for one month.—*S. O. 56, Department of Columbia*, April 8, 1886.

WALES, PHILIP G., *First Lieutenant and Assistant Surgeon.*—Granted leave of absence for two months.—*S. O. 85, A. G. O.*, April 12, 1886.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE THREE WEEKS ENDING APRIL 17, 1886.

WYMAN, WALTER, *Surgeon.*—To represent the service at the meeting of the American Medical Association, at St. Louis, Mo., April 12, 1886.

SAWTELLE, H. W., *Surgeon.*—Detailed as Chairman of Board for Physical Examination of officers of the Revenue Marine Service, April 15, 1886.

URQUHART, F. M., *Passed Assistant Surgeon.*—Relieved from duty at Norfolk, Va., May 1, 1886, to assume charge of Cape Charles Quarantine, April 16, 1886.

YEMANS, H. W., *Passed Assistant Surgeon.*—Detailed as Recorder of Board for Physical Examination of officers of the Revenue Marine Service, April 15, 1886.

HEATH, F. H., *Assistant Surgeon.*—Appointed an Assistant Surgeon, April 15, 1886, assigned to duty at Chicago, Ill., April 16, 1886.